MARCH 1961

THE Airman

OFFICIAL JOURNAL OF THE AIR FORCE

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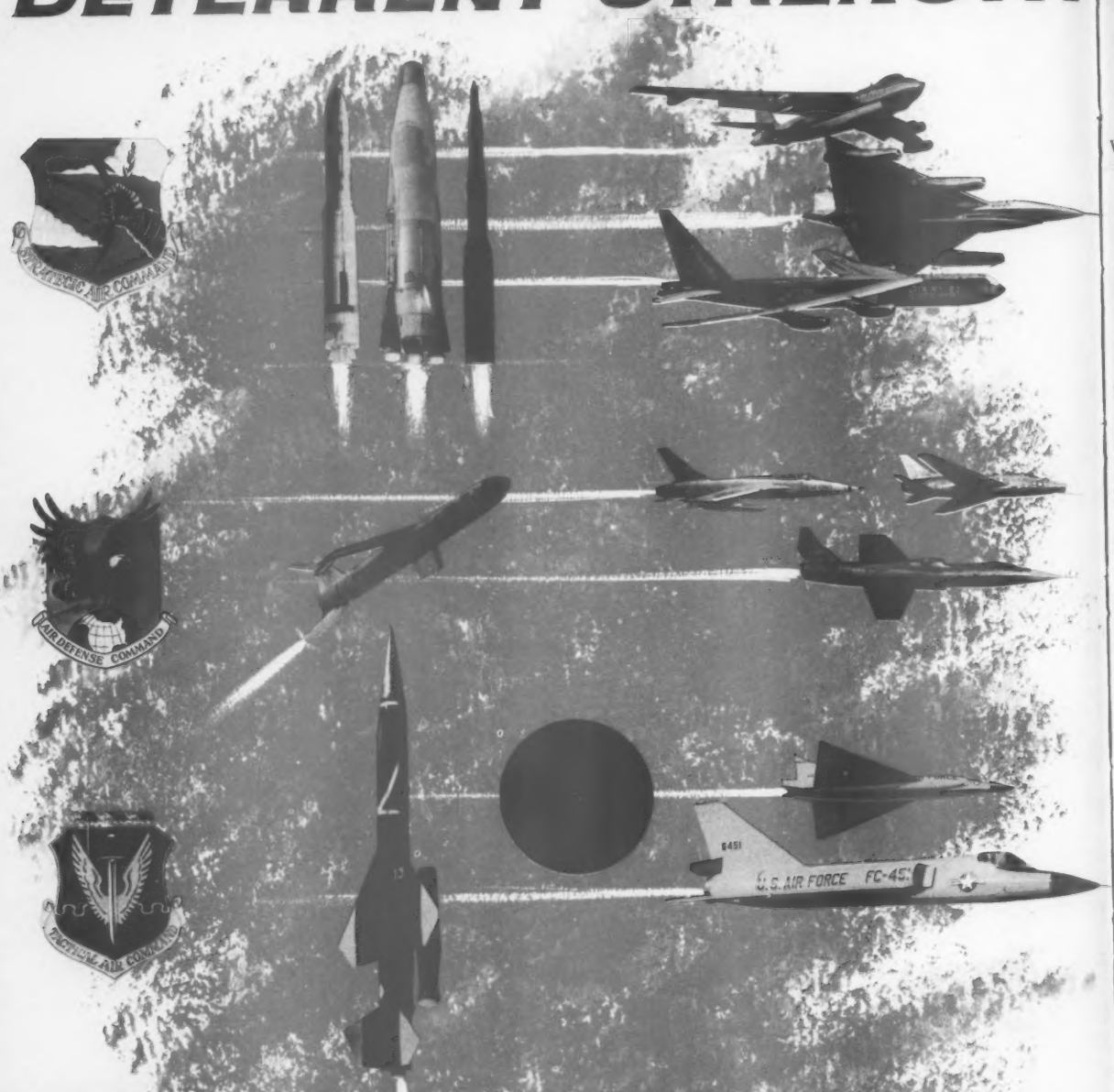

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THE Airman

OFFICIAL JOURNAL OF THE AIR FORCE

Volume V, Number 3 March 1961

Director of Information, Office of the Secretary of the Air Force, Maj. Gen. ARNO H. LUEHMAN. *Chief, Internal Information,* Col. ROGER B. PAYNE. *Editor,* Lt. Col. HARMON H. HARPER. *Assistant Editor,* Maj. ROBERT J. FLANAGAN. *Executive Editor,* TED R. STURM. *Departmental Editor,* SMSgt. HAROLD E. BAMFORD. *Art Director,* SMSgt. LESTER B. BOUNDS. *Production and Distribution,* RUSSELL M. WOODS.

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Editorial Office: THE AIRMAN, Room 2-206 Tempo E, 4th and Adams Drive, S. W., Washington 25, D. C. Telephone, OXford 6-7393.

THE AIRMAN is primarily a medium for the exchange of ideas and information among Air Force personnel. Readers are encouraged to submit articles, short subjects, photographs, and artwork.

LETTERS TO THE EDITOR

Mistaken Identity

Sir: I have just happened onto a copy of your June '59 edition and read the article *Wounded Aboard* which dealt with the exploits of Lt. Jack Mathis who was awarded the Medal of Honor. There was a gentleman of the same name in my graduating class, 43-E, Brooks Field, Tex., in May 1943. In checking his picture in the classbook, I find the photo closely resembles that which appeared with your story. Other factors, such as the fact that he was from Longview, Tex., also seem strangely parallel. Is it possible you have made an error in time of event or in the accompanying photo?

Capt. Van Smith
Hanscom Field, Mass.

• *We double-checked the photo and discovered that the gentleman whose picture appeared was Jack Wells Mathis, not Jack Warren Mathis.*

The information contained in the story is correct. Jack Warren Mathis, a native of San Angelo, Tex., graduated from bombardier training on July 4, 1942, at Victorville, Calif. His serial number was 0 727 110. He was killed in action on March 18, 1943, while serving as a member of the 359th Bombardment Squadron, 303rd Bombardment Group.

The correct photo, above, was taken from a group picture made shortly before Lieutenant Mathis was killed. Our sincere regrets concerning the mixup and our heartfelt thanks to Captain Smith for his assistance in solving this old error.

★ ★ ★

(Continued on next page)

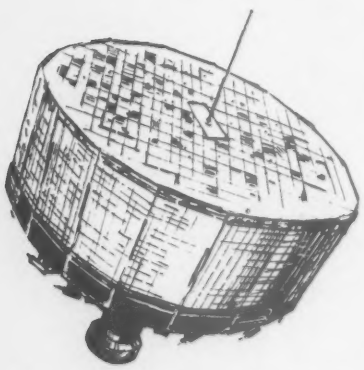
FRONT COVER adapted from painting by Douglas.

LETTERS TO THE EDITOR, *continued*

Tiros I

Sir: A "well done" for Ted Sturm for his excellent article on the first weather satellite, *Tiros I*, in the November issue of THE AIRMAN. (See, *Eyewitness to Weather.*) He well pointed out the truly national effort of the many civil and military agencies in making this satellite a successful U. S. experiment.

Eugene M. Emme
Historian, NASA



Sir: I wish to congratulate you on the excellent article on the *Tiros* meteorological satellite. It is very difficult to write in layman's terms about a subject that is so complex and technical, yet Ted Sturm did so with admirable success. The article was complete and objective and will contribute a great deal to the understanding of the meteorological satellite program as well as the unending problem of weather data collection. All of us who work in meteorology will benefit from this broader understanding by all.

Col. Anthony Shtogren
Offutt AFB, Nebr.

★ ★ ★

Transposition

Sir: Congratulations on the excellent article *Nuclear Weapons Are Safe* which appeared in the December issue. However, in the interest of accuracy, I should like to point out that the cutlines accompanying pictures 8, 9, and 11 on page 46 have been transposed. The cutline on 11 should have accompanied number eight; that on eight should have been with nine; and that on nine should have been with 11.

Col. Charles B. Layton
Washington, D. C.

★ ★ ★

Look North

Sir: *Assignment to Turkey* (December '60) was a wonderful story but, as a "Scandihoovian" by ancestry, I must say, "Look North! Look North!" Your author cites Turkey as the only NATO member with a border joining Russia. Norway has something close to 100 miles of contiguous border with the Soviet Union and is still very much in NATO.

R. Eric Falk
Washington, D. C.

• *Sergeant O'Doherty, the author, is considering TDY to Norway to study geography.*

★ ★ ★

Not Cadets

Sir: I have just completed the December issue and, once more, I would like to express my compliments to the staff. However, I detected a minor error in the *Consolidated Pilot Training* story on page 33. The new undergraduate pilot program will not train cadets. Only navigation training is open to cadets under the new program. At the same time, I would also like to ask permission to reprint and distribute *Training Air Force Missilemen* from your November issue.

Col. W. L. Helmantoler
Randolph AFB, Tex.

• *Thank you for pointing out the error, and permission to reprint the November article is granted.*

★ ★ ★

Hound Dog

Sir: My congratulations on the interesting article by Gen. Laurence Kuter which appeared in the December issue *(Aerospace Defense of North America)*. However, General Kuter has identified the *Hound Dog* as an air-launched ballistic missile (ALBM) when, in reality, it is a guided air missile (GAM). Despite such minor errors, I certainly enjoy reading THE AIRMAN and consider it one of the finest publications that is available to airmen.

A2C James R. Kirby
APO 942, Seattle, Wash.

• *General Kuter did not make the mistake. We did.*

★ ★ ★

The Slip-Stick Stuck

Sir: In your December issue, you have an eye-catching photo of the Wright brothers' *Kittyhawk* contrasted with the B-58 *Hustler* inside the back cover. The caption reads "How Big Is An Idea?" At the bottom of the page, the copy reads, "On December 17, 1903, Orville Wright flew 120 feet in 12 seconds. Today, less than a single lifetime later, the B-58 *Hustler* flies nearly 3,000 times as fast." If my calculations are correct, this means the B-58 is capable of speeds in excess of 20,000 m.p.h.

A3C William M. Morrissey
Springfield, Mass.

Sir: On the basis of the information you carried inside the back cover of the December issue, I have decided that further planning and Government appropriations for the B-70 are wasted.

SSgt. Charles Jacobe
Travis AFB, Calif.

Sir: I think this is a little fast even for our advanced space age.

TSgt. Kenneth W. Mooney
APO 953, San Francisco, Calif.

Sir: I think you made a mistake or a typographical error.

A3C Donald G. Frilley
Lackland AFB, Tex.

Sir: A magazine containing as many excellent articles as THE AIRMAN needs to be thoroughly digested. However, I found I couldn't quite swallow this one.

SSgt. Oland R. Hill
San Antonio, Tex.

• *The above is merely a sampling of the dozens of letters which arrived in this office regarding the error. Naturally, the figure in question should have been 300 instead of 3,000. Our copy readers are now taking special training in this fine art. However, its nice to know so many people read everything in* THE AIRMAN*—even the zeros.*

THE MINUTEMAN AND MOBILITY

A unique partnership between the U. S. Air Force and American railroads adds new strength for counterforce action.

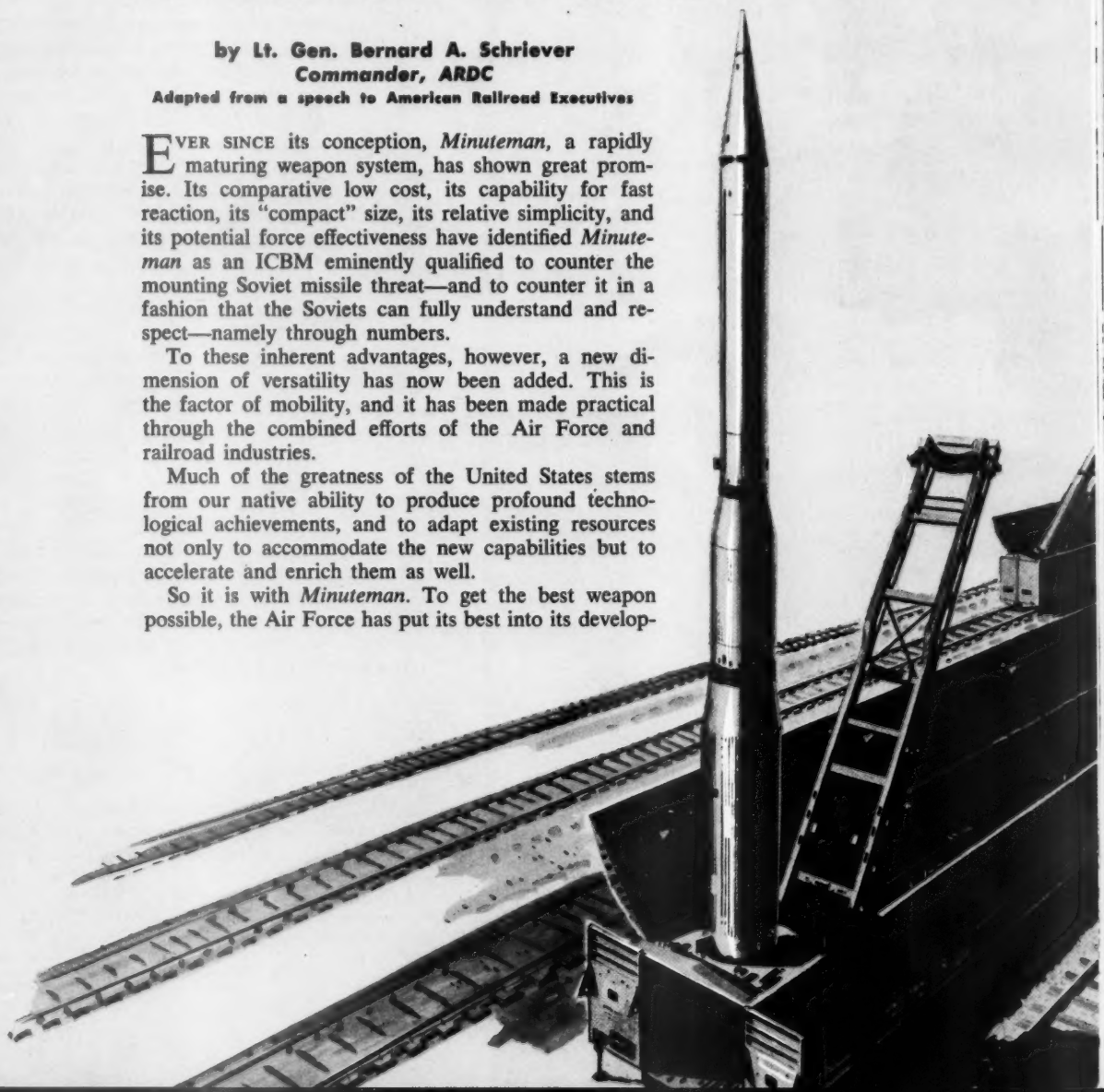
by Lt. Gen. Bernard A. Schriever
Commander, ARDC
Adapted from a speech to American Railroad Executives

EVER SINCE its conception, *Minuteman,* a rapidly maturing weapon system, has shown great promise. Its comparative low cost, its capability for fast reaction, its "compact" size, its relative simplicity, and its potential force effectiveness have identified *Minuteman* as an ICBM eminently qualified to counter the mounting Soviet missile threat—and to counter it in a fashion that the Soviets can fully understand and respect—namely through numbers.

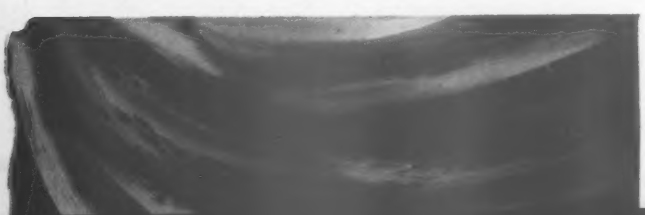
To these inherent advantages, however, a new dimension of versatility has now been added. This is the factor of mobility, and it has been made practical through the combined efforts of the Air Force and railroad industries.

Much of the greatness of the United States stems from our native ability to produce profound technological achievements, and to adapt existing resources not only to accommodate the new capabilities but to accelerate and enrich them as well.

So it is with *Minuteman.* To get the best weapon possible, the Air Force has put its best into its develop-



"By positioning large numbers of Minuteman *missiles in hardened, underground sites we make it economically feasible to mount an impressive counterforce of tremendous power."*



ment. To make the broadest use possible of its po tials, we are mating it with technologies and resou already indigenous to our free enterprise system. are calling upon the American railroad system—est lished and proven as a vital element in our natio makeup—to become an essential supporting link our formation of a modern, flexible, effective IC force.

New Order of Weaponry

The tremendous challenges of defense in these easy times demand tremendous resources. We h such resources in the United States, and we have alm an infinite capability for expanding them. We could have come to the great distance we have in a few sh years if we had not had the spirited support of Am ca's industrial, scientific, technological, military, educational communities.

Ballistic missiles are rapidly entering the new or in weaponry. Their intercontinental ranges, fanta speeds, and destructive potential brand ballistic siles as the electronic warriors for a new military At the present time we have no effective defense aga them. Until we do so our best defense is a capabi for offense. We aim to demonstrate in the face Soviet ambition that we are capable of defeating aggressor who elects to attack us.

Inherent in this philosophy is the necessity for p tecting our own weapons against surprise attack. achieve maximum survivability we have adopted courses: hardening with dispersal, and mobility.

Minuteman is being developed to fit both of th conditions.

By positioning large numbers of *Minuteman* missi in hardened, underground sites we make it economica feasible to mount an impressive counterforce of t mendous power. We also force the enemy to progr a great many weapons toward the single objective knocking out these strategic targets. We levy maxim demands upon his accuracy, timing, and salvo ca bilities.

Look to Mobility

But this is not the extent of our planning. If we to achieve comprehensive, positive deterrence, must close every possible loop in our defense circ We must anticipate improvements in Soviet accura and a continuing build-up of Soviet missile streng So we also look to mobility.

"By deploying quantities of Minuteman *missiles trains which can move freely in random fashion, greatly complicate the enemy's targeting problem*

By deploying quantities of *Minuteman* missiles on trains which can move freely in random fashion, we greatly complicate the enemy's targeting problems. We force him to the uneconomical position of having to expend many missiles for every one of ours he hopes to destroy. By blending survivability and strike effectiveness into our *Minuteman* forces, we arrive at a favorable cost effectiveness ratio. We buy, in fact, the most deterrence for the dollar.

The problems implicit in the fulfillment of the *Minuteman* mobility concept would be infinitely more complex if we did not have a railroad system tailor-made to our requirements. In short, if we had wished the degree of protection afforded by mobility, and we did not have the railroads to put our missiles and our launchers on wheels, we would have been forced to develop a special carrier system at tremendous cost.

Fortunately, we have been able to depend upon the railroads and their combined estimated investment of more than $35 billion in roads and equipment. We have been offered access to some many thousands of miles of usable track. And we have been invited to draw upon the force of one million experienced railroad personnel who can take our trains where we want them to go.

Through mobility we gain another important advantage. We instill into the enemy's strategic planning the element of uncertainty. Since he cannot possibly know where all, or even half, of our mobile ICBMs are going to be at a given point in time, he cannot calculate a paralyzing surprise attack. He cannot launch a salvo blow without being prepared to accept a consive counterattack in turn. This is the kind of realistic situation that must give pause to any would-be aggressor.

These are the simple facts underlying the value of the *Minuteman* mobile system. The total advantages are numerous. Among others, it offers us the capability for maintaining at our fingertips a strike force of great power which will be in position at any time to respond to a launch command.

Another advantage lies in the dispersal ratio proposed for the mobile *Minuteman*. We plan to equip each train with a nominal number of missiles. Thus, if war should be thrust upon us, and some of our trains are attacked, the loss of any one train will not cost us a large number of strike-back missiles. One train will operate on from 900 to 1,200 miles of roadbed—representing an elusive target any way you look at it.

They Are Safe

There are those who worry a good deal about the dangers of having a substantial number of nuclear-tipped missiles roaming about our country and through our communities. I can and do unequivocably deny all reports of such danger. Transporting a *Minuteman* missile about the country will be no more hazardous than the movement of gasoline tank cars—hundreds of which rumble along our railroads daily.

In an accident involving a *Minuteman* launch car the worst that could result would be a low-order explosion, or a high-intensity fire. We are taking steps to minimize even these rather routine dangers, just as we are working to design our equipment to rule out the remote chances of sabotage. Nevertheless, safety will continue to be a subject of popular concern, and airmen can perform a great service in allaying the fears of the civilians with whom they come in contact.

The danger of accidental nuclear detonation is absolutely nil. The warheads cannot be activated before flight, and the erection and launch sequences are such that an undirected launch cannot occur.

The added depth *Minuteman* and the mobility concept provides to our national deterrent posture and the complications they impose on our adversaries combine to give the *Minuteman* a degree of respect that cannot be matched by any other modern weapon system.

Bonuses and Breakthrough

We have encountered some "bonus" benefits, too, in the evolution of the *Minuteman* system. As demanding as many of the problems have been, we have made

AIR FORCE MISSILE TRAIN *takes on water while stopped on a siding during long cross-country test journey.*

exceptional progress in resolving them—meeting or exceeding our schedules all along the way.

Also we have achieved some notable economic break-throughs. For instance, we saved about $10 million in our test program by scoring eight consecutively successful tethered launches at our Edwards prototype silo facility, and thereby eliminating the need for carrying out the projected series of 18 shots.

Now we are on the verge of accruing even more remarkable savings through the implementation of our radio launch control system. I would like to comment on this system in a little more detail, for it represents a new departure in the technology of communications.

The first complex of *Minuteman* facilities will be built underground near Great Falls, Montana. There will be one launch control center for every 10 missiles, but these centers will have auxiliary capabilities as a measure of protection. To tie all of these centers and missiles together would require hundreds of miles of special cable at an estimated cost of between $20,000 and $25,000 per mile.

For two years now we have been pursuing a study aimed at eliminating the need for much of this cable connection system. As an alternative, we propose to install a system that has been described—and erroneously, I might add—as the "earth current" system. This system consists essentially of a series of special antennas, which are nothing more than a "grid" arrangement of cables buried a few feet underground adjacent to each control center. The radio waves emanating from these antennas reach upward to the surface where they are "bent" by a refraction principle and then travel along the surface of the ground to the receiving antennas.

There are several advantages to this system. The biggest one, of course, is the greatly reduced cost attainable by the elimination of most of the underground networks of cable. In fact, we estimate that we shall be able to save about $300,000 per missile deployed.

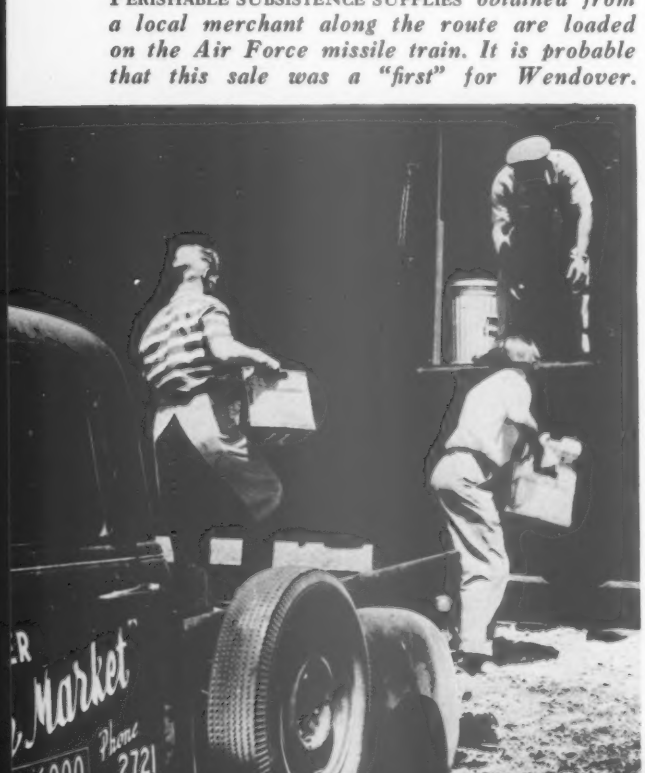
Another significant advantage lies in the fact that the system as we are devising it will represent a virtually jam-proof communication network which is also highly invulnerable to sabotage.

We are convinced that the system is practical. But to assure us of the practicality and reliability of the functional arrangement, we began—earlier this month—a full-scale test using equipment similar to the hardware that would be utilized in the operational program.

Major technological advances of this calibre are exciting, and they testify to the kind of progress that has characterized the total *Minuteman* program.

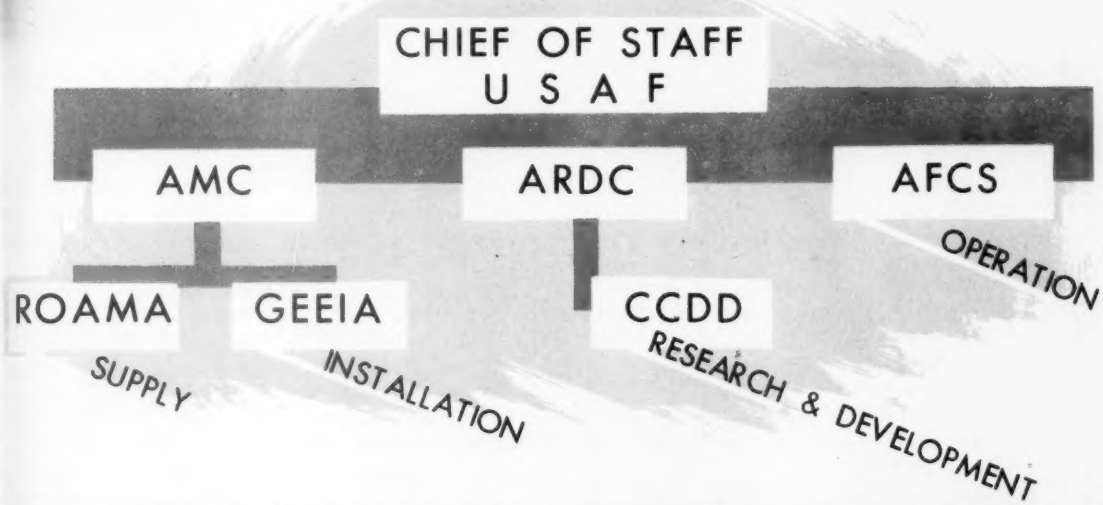
Railroads have long held an unparalleled importance in America. The military services have depended on them for logistic support in peace and war. Now, and in the future, a new, even more vital partnership between the railroads and the Air Force is a matter of increasing strategic significance. Our aim is simple: operational capability for the *Minuteman* mobile system at the earliest possible date.

PERISHABLE SUBSISTENCE SUPPLIES *obtained from a local merchant along the route are loaded on the Air Force missile train. It is probable that this sale was a "first" for Wendover.*



A NEW COMMAND FOR AN EXPANDING JOB

The Air Force Communications Service will provide single management for operation and maintenance of the USAF aerospace communications complex.



With the establishment of the new Air Force Communications Service (AFCS) on July 1 this year, the third major step in a realignment and consolidation program of USAF communications-electronics activities will be under way. Announced recently by General Thomas D. White, Chief of Staff, USAF, the new command will initially include about 58,000 people. It will assume operational responsibility for all Air Force C&E functions except certain of those which are inseparably integrated with specific operational activities.

The expanding role of C&E in aerospace operations indicated in the middle 1950s a growing need for consolidation of these functions. In 1958 the first step in this direction was taken with the establishment of a central C&E procurement and logistics agency in the Rome Air Materiel Area, and creation of the Ground Electronics Engineering Installation Agency (GEEIA) which assumed the task of installing C&E equipment. Both agencies are part of the Air Materiel Command. The establishment of the AFCS does not affect these activities.

The following year ARDC established the Command Control and Development Division (CCDD) at L. G. Hanscom Field, Mass. All development and integration of command and control systems in communications-electronics is conducted by CCDD.

Leading to the establishment of the Air Force Communications Service were trial operations conducted in the Pacific and Alaskan theaters. Consolidation was proved feasible, and in fact brought about greater efficiency as well as savings in money and manpower.

As a result of this success, a study group was appointed by the Air Force Chief of Staff. The recommendations of this group indicated the need for a separate command with operational and maintenance responsibility for communications and electronics. Subsequent evaluation by the Air Staff and major commands produced unanimous agreement with the recommendations and the principle of the single-manager concept.

Integration of communications functions, facilities, systems, and personnel into the new command will begin in July. The process will be accomplished over a two-year period as application is extended to each major command in turn. MATS will be first and SAC last. All facilities of the AACS will be absorbed by the Air Force Communications Service. The commander of AFCS has not yet been named.

Mission and functions of AFCS include the operation and maintenance of the Air Force portion of the Defense Communications System, all USAF communications networks, base communications facilities, air-to-ground communications facilities, and terminal and enroute navigational aids. The command will also plan and program for facilities, personnel, and funds for communications support; administer leased-communications services and supervise certain communications-contracted activities; provide operational guidance; and maintain close liaison with GEEIA and CCDD.

Sagof

by Lt. Col. C. V. Glines

A REVIVAL of interest in World War I aviation in recent years has resulted in several books and articles about air heroes of yesteryear whose feats have become legendary. But none of these stories includes the saga of one of the most famous flyers of his day, John Silver.

Silver had no rank, yet he flew many important missions over the front lines for the Allied forces. He received no pay, yet he served in the Army for almost eighteen years. He never received any formal flight training, yet he was respected throughout the aviation world for his extraordinary feats of airmanship. He lost a leg while on a vital mission over enemy lines, yet received no compensation or awards and was never even fitted for an artificial leg. When he died, he received no military funeral, yet he has been permanently memorialized by his flying brothers whose sky he shared.

The United States Government isn't ungrateful in the case of John Silver. It just has never quite known what to do about a fellow like him. You see, he was the Army's most famous homing pigeon.

According to official Army records, John Silver was hatched in January 1918 in a pigeon loft behind the lines in France. He spent his first weeks learning the gentle art of day flying and homing. He learned to carry a small metal cannister strapped to his leg and fly unerringly back to his loft in spite of the noise of gun fire and bad weather. Upon "graduation" he was assigned to a front line infantry unit for courier duty. His first messages were relatively unimportant so that if he became confused and fell into enemy hands, no vital information was lost. When his company commander was satisfied that John was reliable, he was given more important messages.

From the first, his exceptional skill at dodging artillery barrages was noted. Time after time, when the shelling was especially heavy and a message had to be sent rearward, John got through. On several occasions, he was the only one of several pigeons released that survived the mission.

It was on October 21, 1918, at exactly 2:35 p.m. that John Silver was released from a front line trench near Grand Pré. The now famous Meuse-Argonne drive had just begun and the rear headquarters at Rampo 40 kilometers away, had to be notified of the rapi changing battle situation. The Germans were lay down an intense artillery barrage before an attack, a the unit needed help.

When the cannister was strapped on his leg a John was released, the tense soldiers watched anxiou because their very lives could depend on his gett through. John fluttered briefly along the ground, star toward the enemy lines for a few feet, then turn toward the rear as he leveled off at tree-top heig The men below shouted their encouragement, but su denly gasped when they saw a shell explode near hi

The blast threw the pitifully small body upward a hundred feet amid a shower of earth and feathe John plunged earthward momentarily, then flapped wings wildly to gain back his balance and continu on his way. But the men felt sure that he had be badly hurt and would never make it back to he quarters.

Less than a half hour later, John flopped onto loft landing, more dead than alive. A machine g bullet had pierced his breast, bits of shrapnel h ripped mercilessly into the tiny body, and his right was missing. The message tube, however, was dangli from what was left of his torn leg. He had successfu completed his mission in spite of his wounds.

The men of John's Signal Company nursed him ba to health. The stump of his right leg healed and could still fly. His gallantry was contagious and men refused to let him be destroyed or retired. Instead, he became an inspiration and acquired the na of "John Silver," after the one-legged pirate in *Tre ure Island*.

After the war, John was assigned to the 11th Sig Company stationed at Schofield Barracks in Haw where he became the special charge of Pigeon Serge Clifford A. Poutre, now a retired Colonel.

"We kept John Silver in comfortable retirement his later years," says retired Col. John A. Balla then a major and Signal Company commander of Hawaiian Division. "He was one of 240 pigeons we h in our lofts there at the time but we didn't give h any 'duties' and didn't let him fly. I couldn't say po

...of John Silver

AIRMAN EXTRAORDINARY

...ely but I think he was an inspiration to the other ...geons and gave them encouragement when we were ...oneering in the training of night flying birds," he said. John Silver stayed in Hawaii until his death on ...ecember 6, 1935 at the age of 17 years, 11 months—...emarkably old age for a pigeon.

..."I know how an old cavalryman felt when his horse ...d," Colonel Ballard said, "because losing John was ...e losing an old service buddy. There wasn't a dry ...e in the company when the news got around because ... loved the old gentleman more than we realized," ... concluded.

...Colonel Ballard immediately ordered that he be pre-...ved and on January 1, 1935, signed a company ...der which is still being carried out today. The order ...d, ". . . The courage and devotion to duty displayed ... John Silver, and above all, his will to accomplish ...s mission and reach his objective, are attributes ...rthy of emulation by every soldier of his company.

..."Hereafter on each organization day of the Eleventh ...nal Company, this order will be read and the name ... John Silver will be added to the roll call. When his ...me is called, the senior non-commissioned officer ...esent will respond, "Died of wounds received in ...ttle in the service of his country."

...A few months after the order was published, a ...iting Congressman was so impressed with John's ...r record and the tribute paid him by his comrades ...at he had the company order inserted in the Con-...essional Record.

...The official files do not reveal what happened to ...hn during the war years but in 1946 he was found ...ored away with World War I aviation mementos. ...hen Gen. Henry H. "Hap" Arnold ordered the ...ablishment of a permanent museum for the newly ...eated Air Force, John was among the first items put ... public display. Today this gallant airman stands ...oud and erect in the Hall of Fame at the Air Force ...useum located at Wright-Patterson Air Force Base, ...io. Last year over 350,000 visitors to the world's ...gest military aviation museum read the citation tell-... of John's heroic deeds.

..."But there's one thing I want to correct as far as ... record of John Silver is concerned," Colonel Bal-lard said. "I notice that he is referred to as 'Stumpy' John Silver in the citation. The dignified mien of the old gentleman was certainly not conducive to calling him that. We never referred to him by that sobriquet and I feel sure that if a visitor to the lofts had ever addressed him as that, he would have been summarily thrown out of the area!"

The record is now straight. The name of John Silver means something more than a character out of a Stevenson classic. Who can deny that *this* John Silver has earned a permanent place for himself on the roster of America's aviation greats?

Two to make ready, One to Go

The X-15 is the star of the show, but without the supporting cast the curtain couldn't go up.

WHEN THE X-15 sets its next world speed and altitude record at Edwards AFB, Calif., newsmen will duly report that it was carried aloft under the wing of a B-52 jet bomber. It will be understood that this is no ordinary bomber but that's not the whole story. It is serviced by an extraordinary crew with a perfect record.

But that isn't the whole story either. There are two of these specially modified B-52s—two maintenance crews, and two perfect records. Never in the history of the X-15 test program have the men of the Flight Test Center's 6517th Flight Line Maintenance Squadron (Bomber) failed to make ready one to go at the appointed time. It takes some doing. It takes eight men about 60 hours of careful maintenance work each week to put one of the B-52s into the air with the X-15 tucked under its right wing.

"What impresses me most about these crews," declares Capt. Maynard N. Heth, the Bomber Squadron Maintenance Officer, "is that I know that they are vitally interested in what they're doing. They have the interest of the X-15 program uppermost in their minds all the time. Because of this, we never had an X-15 flight delayed or called off because something went wrong with one of the B-52s; they are always on time."

Both 52-003 *(High and Mighty I)* and 52-008 are full of equipment not found in ordinary jet bombers. Things like stable launch platforms, TV cameras, launch systems, and other embellishments are laced gether by 50 miles of wire running from tip to tail the 147-foot, 450,000-pound airplane. The wings been beefed up to support the weight of this ment and the X-15 it serves. Such unorthodox are full of "bugs" that maintenance crews doing tine work on an ordinary B-52 never run into.

That's what makes the 6517th maintenance records unusual. That and the dedication they give their mission. The dedication is helped by a rivalry. Each crew insists that its plane is better the other's. The only real proof they can offer is ribald poetry they write about each other and that TSgt. Robert Wynn's 003 crew calls TSgt. Les Schroyer's 008 crew the "Second String." Each of two aircraft have launched about 10 powered of the X-15 but 003 carried the experimental when the first speed and altitude records were set.

All this rivalry is good, says MSgt. Kenneth Lapea flight chief of the B-52 maintenance section. The lenge of the job and the rivalry of the crews make men forget the long hours of demanding labor, build morale and harmony.

"When problems arise," Sergeant Lapean will you, "the crews will always cooperate to assist others; for example, when one crew needs extra sonnel, the other will send help right away."

Once an engine failure on 008 the day before

laced heduled test kept Sergeant Schroyer and his "second to tail ring" crew working around the clock—from 1000 rings hae morning until 0300 the next morning—changing his equie engine so their plane could lift the research plane x syste next day. Another time the 003 crew removed, oing reaned, repainted, and installed the vertical stabilizer . four days. It is normally a week-long job.

ce crew The two crew chiefs, Wynn and Schroyer, have been ey give orking on these modified bombers for about two a friendars. Both double as flight engineers during test mis- etter thons. Each member of the two crews has had letters fer is t appreciation from North American Aviation, the d the fntractor for the X-15. The entire flight test program gt. Les the X-15 depends on these two aircraft and the ch of en who maintain them.

ed fligh Wynn earned a Commendation Ribbon by shuck- ital plag his 'chute so that he could climb down into the e set. nding gear bay and repair the gear that had failed n Lapea retract. He hung onto his precarious perch by wrap- The ching his legs around a post.

make "I got a pretty good view of the ground from that bor, angle," he reported wryly.

Wynn shot a color photograph of the X-15 for will tational *Geographic* Magazine that was praised as assist the most dramatic ever made of the X-15. It was his xtra pst aerial photograph.

Besides Wynn, the 003 crew members are TSgt. before onald Mangold, TSgt. Wilmar Hillis, A1C Columbus Williams III, A1C Joseph Dillon, A2C Robert Clark, A2C Raymond Twigg, A2C Harold Roedel, and Mr. Colie S. Hopkins.

With Sergeant Schroyer on 008 are TSgt. Harweda Terrell, SSgt. Lawrence Maharrey, A1C Donald Kemmer, A1C Vernon Barr, A2C Norman Smith, Mr. Robert Swanson, Mr. William Wyant, and Mr. Albert H. Rice.

"If the X-15 carrier ships have a good reputation," Captain Heth says, "it is because of the mechanical ability and dependability of these crews."

What You Should Know

The old adage about a little knowledge being a dangerous thing may be true in regard to many things but to auto insurance a little knowledge may be a most desirable and useful asset.

Many cases involving difficulty with auto insurance indicate that the airman neglected to obtain expert advice from qualified source before buying his policy.

"SAVE ON AUTOMOBILE INSURANCE."

That was the advertising slogan that prompted Airman "Frank Jones" to buy "bargain auto liability insurance." He purchased his policy in his state of residence, which happened to be the state where he was stationed. When he transferred to a different base the insurance company cancelled his insurance because he was going to a state in which the company was not authorized to do business.

An airman stationed in the midwest was involved in a car-strikes-motorcycle accident just outside the base. He discovered too late that his auto insurance only covered him on the base.

A staff sergeant under 25 found it difficult to buy a *standard* auto insurance policy. He settled for a "mail-order deal." The policy, written by a small, unknown company, was so full of exclusions and exemptions it was more of a delusion than a protection.

These are typical recent auto insurance complaints from the files of Air Force base legal offices. There are many more like them—too many more with all kinds of variations.

In almost every case the airman involved purchased auto insurance without consulting his base legal assistance officer, the Personal Affairs officer, or the Provost Marshal.

The airman who buys "bargain insurance" without checking to be sure he is dealing with a reputable broker or insurance company, and without reading the policy to see what protection he is actually getting is—in the words of one legal assistance officer—"Asking for it."

Read Your Policy

Unfortunately, few airmen take the time and trouble to read their policies. For the most part, they accept without question what an agent, a newspaper ad, or a mail-order circular tells them. They never doubt the insurance broker's interpretation of the policy or his authority to act for and on behalf of his company. Such implicit faith, though touching, often gives rise to serious difficulties, including lawsuits.

A policy, it should be remembered, is a contract containing the terms agreed upon by the company and the policyholder. It is interpreted and governed by the same legal principles controlling other contracts.

To avoid being "taken" by unscrupulous underwriters, learn the basic facts about automobile insurance. You should, for example, realize that auto insurance is not really a single kind of insurance, but several kinds. You buy several coverages, each insuring you against a different hazard, though nowadays all are usually wrapped up in one package.

bout Auto Insurance

many matters, but when it comes

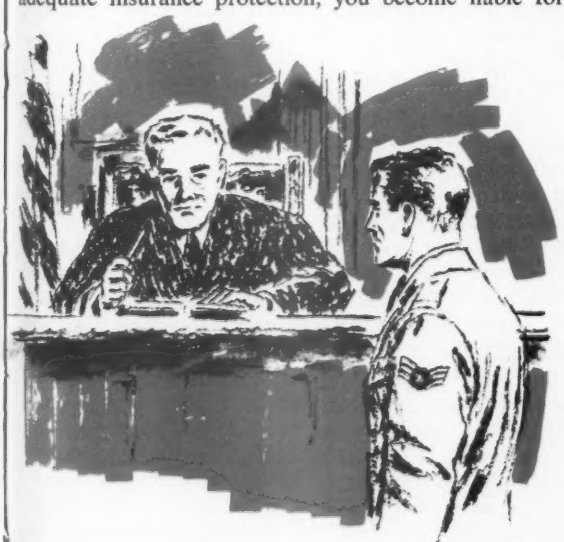
by Dave Karten, *Airman Staff*

Why Do You Need Insurance?

If you own a car you need the right kind and amount of insurance for financial protection. You need it for injury or damage caused to someone else or his property, and to you or your property.

Insurance laws and regulations are for your protection. Injuring someone could lead to financial ruin. You can also suffer the loss of your automobile through hundreds of types of mishaps. If you finance your car, the lender will require insurance against the loss of his investment.

Damage to either your car or another's, or both, may mean costly repairs. Bodily injury to someone in your car or another's car can end in heavy medical expenses and even a lawsuit for settlement or damages. In the event of an accident, if you don't have adequate insurance protection, you become liable for a substantial amount of money which may impose great hardship on you or your family for years to come; also your driving permit may be revoked. Court awards of $50,000 against a driver who causes damage are common, and verdicts have run much higher.



rt awards of $50,000 against driver who causes damare common. Some may run considerably higher.

Types of Auto Insurance

There are several types of insurance which offer you protection against the expenses resulting from an accident.

LIABILITY INSURANCE: Protects you (the car owner) against the injury or damage claim of another person resulting from an accident caused by your car. There are two main parts to this policy.

Bodily Injury: Protects you (the car owner) against claims for injury, sickness, or the death of a pedestrian, or the driver, or passengers of another car resulting from an accident caused by you or your car.

The company agrees to defend you against lawsuits and to settle any judgments up to the limits set in your policy.

The company will pay no more than the amounts specified in the policy, say $10,000 for injury to any one person and $20,000 for all injuries resulting from one accident. If there is a higher judgment, you personally remain liable for the excess.

Property Damage: Protects you the same way bodily injury liability coverage does, except that it pays for damages to property—another car, a telephone pole, a building—instead of people. It is usually sold in combination with bodily injury protection. Here, too, a top limit is set on what the company will pay for each accident.

Medical Payments: Optional coverage for medical payments offers protection to occupants riding in or driving your car for medical, dental, surgical, hospital, nursing, and funeral expenses resulting from an accident, regardless of who is at fault. It also protects the policyholder and his family against medical expenses (as listed in the policy) caused by an accident while riding in another vehicle or when hit as a pedestrian. The additional cost for this coverage is very small.

Collision insurance covers damage to car no matter who is at fault. Generally sold on "deductible" basis.

COMPREHENSIVE OR FIRE AND THEFT COVERAGE: This type of policy varies with the type of coverage you want. Comprehensive insurance pays for direct or accidental loss of, or damage to, your car for any enumerated cause other than collision or upset. The protection may include loss or damage due to fire and theft, glass breakage, vandalism, windstorm, hail, flood, smoke, falling objects, and other causes as listed in your policy. Separate polices are available for only fire, or for fire and theft.

When you buy comprehensive physical damage auto insurance the company agrees to reimburse you if the car, or any part of it, is stolen or damaged by fire, lightning, flood, windstorm, glass breakage, or falling objects. It also pays for losses due to vandalism or "malicious mischief." This type of policy does not pay for collisions, mechanical breakdown, wear and tear, or freezing, and may list other particular exclusions.

COLLISION INSURANCE: Provides payment to you if, for example, your car skids off the road and turns over. You receive reimbursement regardless of who caused the accident. Collision insurance offers you the additional protection of being reimbursed for damages caused by an irresponsible driver with no insurance. Collision also covers damages to your car if you upset it or bang into another car or fixed object. You can collect no matter who is at fault. Full coverage on collision is expensive. To hold down premiums, it is usually sold on a "deductible" basis. You pay for damages up to a certain sum, and the company pays any excess amount.

"Deductible" means you pay the first $50, $100, $150, or more of the loss, depending on the policy you purchase. Anything above this stated amount is paid by the insurance company. A deductible clause makes it possible for the insurance company to offer collision insurance at a lower rate. The higher the deductible amount the lower the premium.

When you buy automobile insurance you can put together any kind of a program you want, so much of this, so much of that, none of some other.

You can also buy a number of lesser coverages. Uninsured-motorist insurance, for example, protects you and your passengers if injured by a driver who carries no insurance, or by a hit-and-run car. If he can't pay what the courts award you, the company will, within limits.

How Much Do You Need?

The important thing is to be sure the amount of liability insurance you carry is sufficient, both for bodily injury and property damage, to meet the requirements of your state's Motor Vehicle Safety (or Financial Responsibility) law in the event of an accident. Forty-seven states and the District of Columbia have such a law which makes you responsible for the expenses of an accident caused by you. If you carry no insurance, or your insurance is inadequate, and you fail to settle or deposit security (within 60 days) for damages resulting from an accident in which you were involved, you automatically lose your car registration and driver's license. How do you find out what the state requirements are? Check your base vehicle registration office.

Claims for bodily injury and property damage can sometimes run into tens of thousands of dollars. Many drivers carry $25,000 or more for injury to one person or $50,000 or more for any one accident. USAF personnel who operate a motor vehicle on an Air Force base are required by AFR 125-14 to have a minimum

of $5,000 and $10,000 insurance for personal liability and $1,000 for property damage. This is commonly called five, ten, and one. If you wish to carry more than the minimum required by AF regulation or by state laws, you'll find the cost for additional coverage small. Most states require you—directly or indirectly—to carry a minimum amount of liability insurance, usually 5/10 or 10/20 bodily injury and $5,000 property damage.

The Cost of Insurance

Automobile insurance rates vary a good deal and depend on the "risk" category into which the driver falls and the geographic area in which he drives. Most companies have at least six risk categories. The premium depends on such factors as the age of male drivers, use of automobile, and insurance statistics for the state and community in which you live. For collision insurance the original factory advertised price of your car is a factor in the premium charge. Collision premiums are higher if an airman (or any person) under 25 years of age will be driving.

Where to Buy Insurance

There are more than 600 companies in the U. S. writing auto insurance today, though not all of them write policies in all states. Some are specialty companies who sell only automobile insurance. Others are general in nature and sell a variety of types and kinds of insurance.

You can buy auto insurance through an agent (who represents one or more insurance companies), through a broker (who does business with many companies), or by mail order (directly from a company). In some instances your car dealer will arrange comprehensive and collision insurance, but usually he does not arrange for bodily injury, property damage, or medical payments insurance.

In the event of an accident, the interest of an independent agent or broker in your welfare can bring about more prompt and advantageous settlement of your claim. He also is in a position to explain the advantages and disadvantages of different sources from which insurance may be purchased. There are certainly more reliable mail-order companies than there are unreliable ones. They are convenient, but there is the disadvantage that in buying auto insurance by mail you may feel an impersonal relationship exists with the company.

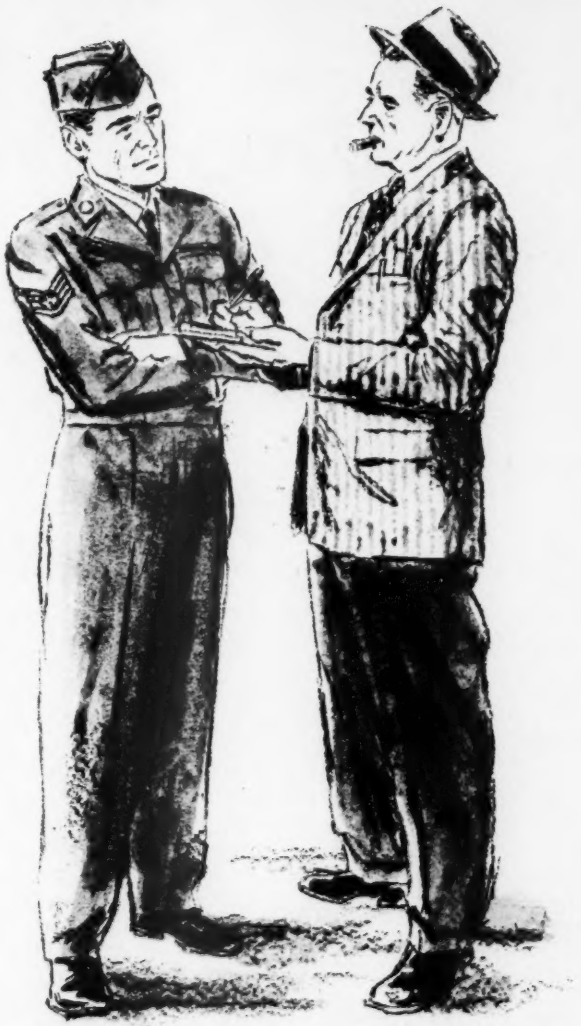
No Bargains

Why is the purchase of automobile insurance a problem to Air Force personnel? Col. George W. Croker, Chief of the Personnel Services Division at Hq. USAF, explains it this way:

"The increased accident rate and high cost of claim settlement in recent years have increased premium rates for insurance to a point, in many instances, beyond the means of airmen in the lower grades.

"This situation has given rise to an increase in the number of companies soliciting the sale of automobile and casualty insurance through advertisements in various news media as well as by direct mail. A number of these companies aim their advertisements at members of the Air Force and claim that their ability to provide insurance protection at a lower cost is the result of their direct selling in which no agents' commissions are paid. Is this true? In most cases, yes, but the pitfalls are many and Air Force personnel are urged to select these companies with caution. They are advised that those who do not may experience difficulties when transferring to other states or at the time of renewal."

However, as Logan Hysmith, Air Force member of the DOD Insurance Board, told THE AIRMAN: "The Air Force recognizes that there are perfectly reliable



Whether dealing with a mail-order company or with an agent in person, airmen should learn all the facts.

Emphasis on driver training within the Air Force has inspired some companies to offer reduced rates to airmen who have completed driver education courses.

companies who do business by mail. Airmen should not become so alarmed that they will refrain from considering these companies. After all, a slick-tongued salesman can be more dangerous than an advertisement in a reputable newspaper or magazine. Most publishers will not accept misleading advertising."

Airmen are advised of their right to purchase liability insurance through the assigned risk pool of the state in which they are stationed. They are also told about the disadvantages of acquiring insurance in this fashion and cautioned to do so only as a last resort because assigned risk insurance has definite disadvantages. For example:

1. The company providing the coverage is *not* obligated to renew the policy beyond a given period.
2. The rates may be *higher* and, in cases of airmen under age 25, *prohibitive*.
3. The policy is subject to *cancellation* when transferred from the state.
4. Premiums are usually required to be paid cash in *advance*.

These difficulties may prompt an airman to acquire bargain insurance, written by small unknown companies, that are so full of exclusions and exemptions they are more of a delusion than a protection.

The Air Force is Concerned

Nevertheless, the Air Force is very much concerned over the lack of uniformity of the automobile insurance laws of the different states. It is also aware of the problems encountered by airmen in acquiring necessary insurance coverage; the fact that major insurance companies, who generally are competitive for business, will not issue policies to airmen under 25 (unless compelled to do so under the assigned risk laws of the state); and that a number of promoters have stepped in to fill the gap by selling what the USAF considers *substandard* coverage.

The Air Force repeatedly warns airmen about the operation of unscrupulous unlicensed companies that specialize in taking your insurance dollar and giving you, at most, an *inferior* type of protection. But there are always a certain number of airmen who "never get the word."

So, don't be an auto "insurance idiot." If you have any question about auto insurance, seek counsel from your legal assistance officer *before* buying an automobile insurance policy. Too often the airmen who seeks advice has already purchased a substandard policy. It is a *fait accompli* and there is little that the legal assistance officer can do about it.

No Easy Solution

There is no easy solution to the auto insurance problem in the Air Force. Driver-training education and policing of the insurance industry, which is the responsibility of the states, may be part of the answer.

Considerable emphasis has been placed on driver education within the Air Force since 1956. Some insurance companies familiar with the program have recognized the worthwhile results and have agreed to give a reduction of standard rates to airmen under 25 who have completed such a course, but this is not yet widespread. The USAF anticipates that if it can prove Air Force personnel are better risks because of their driver-training education and the formation of safe driving habits, we can anticipate recognition from the insurance industry as a whole in the form of reduced auto insurance rates.

Until that happens, or until there is some type of federal legislation requiring the major casualty insurance companies to accept auto insurance under 25, mail-order insurance gimmick bargain policies will be sold. So be alert to it. Remember the warning, first issued in ancient Rome, is still meaningful today. *Caveat Emptor*—Let the buyer beware!

Clues from your Calendar

The greatest portion of America's counterforce wallop—and consequently its deterrent strength—rests with three Air Force combat arms: Strategic, Tactical, and Air Defense Commands. They were activated on March 21, 1946.

As a team, the commands are prepared to handle any type of conflict. Their power and readiness are a strong deterrent to any attack on the United States or its allies.

SAC's fleet of 2,000 bombers and rapidly growing missile inventory comprise 90 percent of the Free World's total striking power, as measured in TNT equivalents. From more than 70 bases across the world, SAC B-47, B-52 and B-58 jet bombers are keyed for immediate action. About one-third of the SAC force is on 15-minute ground alert at all times, with aircraft fueled and loaded, and crews within scant yards of their planes.

SAC missile crews pull alert duty, too. Their nuclear-armed weapons can be triggered under Presidential order and reach targets half a world away in minutes.

TAC's limited war force is designed to deter or stop aggression at any spot in the world. Composite Air Strike Forces, composed of fighter-bomber, reconnaissance, refueling, and transport aircraft, can move within a few hours to any "hot spot" on the globe. The effectiveness of these strike units as a deterrent was proved in 1958 when they were used to deter Communist moves in Lebanon and Quemoy. TAC troop carrier units can assist ground forces by airlifting crack troops to the heart of a conflict.

ADC—as the Air Force component in the joint U. S.-Canadian North American Air Defense Command—operates a fleet of deadly fighters and interceptor missiles from a network of bases across the country. The command's SAGE (Semi-Automatic Ground Environment) computers can direct fighters and missiles against invading aircraft quickly and accurately.

Radar defense systems extending along the Far North perimeter and to points in both the Atlantic and Pacific oceans would give the first notice of imminent attack on North America. They thus provide the vital time needed to launch SAC's alert force and ADC's defensive units.

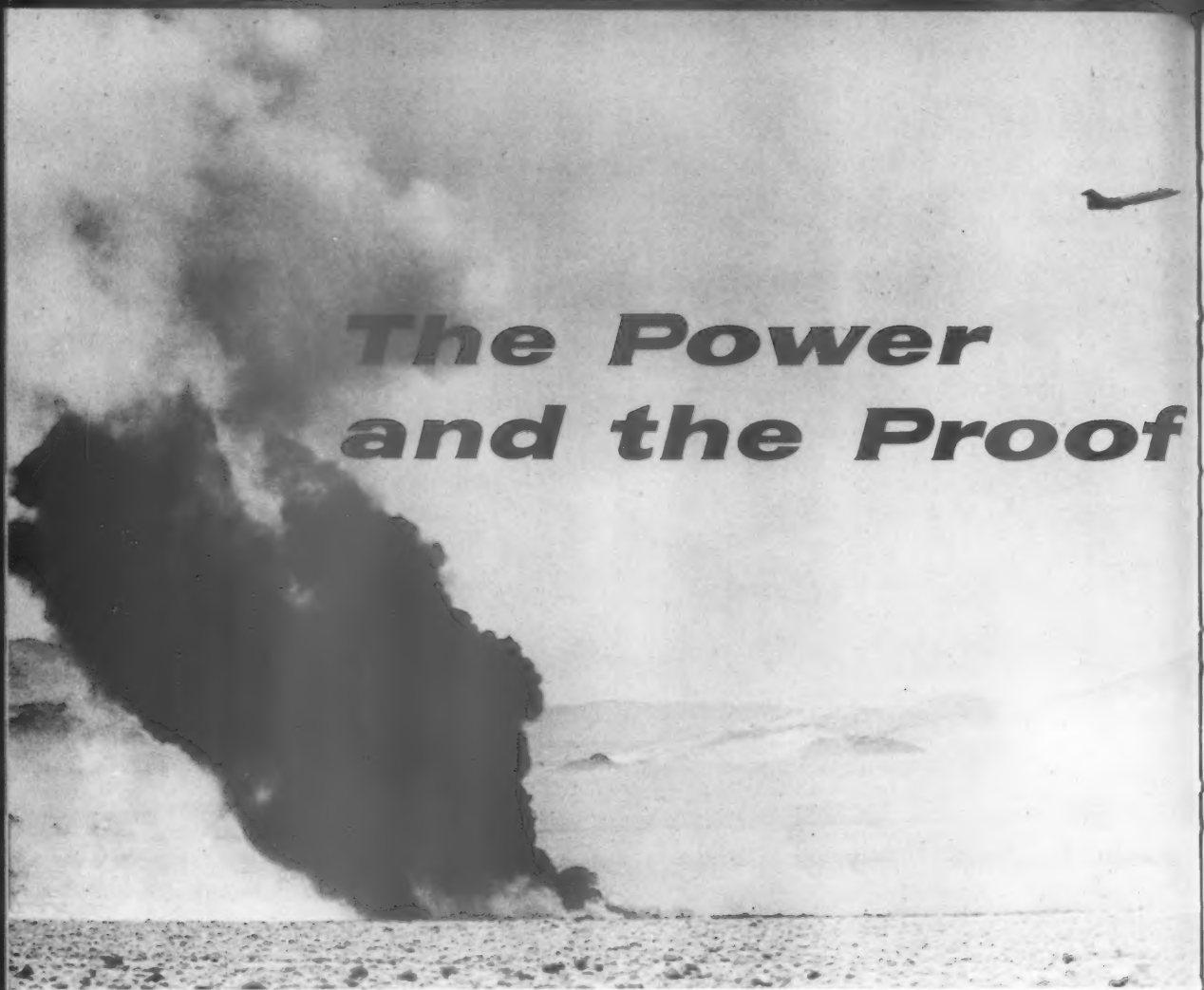
The three Air Force combat commands have a staggering job. That's why March 21, 1961, although a very special anniversary, must be a "business as usual" day in the Air Force.

As these fighting commands of the USAF stand guard over liberty, their existence answers a rhetorical question asked on the 23rd day of March in 1775. "Is life so dear or peace so sweet as to be purchased at the price of chains and slavery?" The speaker? Patrick Henry.

And almost a year later, on St. Patrick's Day, British forces quit Boston after an encircling siege by George Washington's troops.

Today SAC's Commander in Chief can alert his global forces by picking up a red telephone in his combat operations center. The telephone bears little resemblance to the one Alexander Graham Bell patented March 7, 1876. And the Air Force communications complex geared to alert U. S. Forces to an enemy attack is even more dissimilar to the infant system of the Signal Corps when it was established in March of 1863.

Speaking of patents, the first Wright Airplane patent, based on their 1902 glider was filed in March 1903, although it was not issued until three years later. On March 4, 1909, President Taft approved a joint resolution of Congress awarding Congressional Gold Medals to the Wright Brothers. By March 3, 1911, military airpower was so well recognized that Congress appropriated the staggering total of $125,000 for FY 1912 air operations. Today this would pay for the cost of operating 10 B-52s for one hour.



The Power and the Proof

Except that nobody was shooting back, you couldn't tell it from a real war. That's the way the Air Force wanted it.

by Capt. Don Millard, *Hq. TAC*

IN THE cold predawn hours early last October armament specialists and crew chiefs readied their precision fighter-bombers for combat.

While the surrounding countryside slumbered, napalm fire bombs were hoisted gingerly onto clamps under sweptback wings; 20mm. cannon loaders fed ammunition chains into receptacles for thirsty "Vulcan" cannons; MA-1A palouste starting units were checked and readied; F-100s and F-104s were parked and "chocked," their "turtle-backs" and "barn doors" removed as crew chiefs and maintenance specialists made last minute checks.

One by one the pilots emerged from the briefing room, G-suit leg pockets bulging with check lists and maps. Incidental personal items such as survival knives, pencils and pen lights—items without which a seasoned fighter pilot would feel naked—were stuffed in other pockets or arranged neatly on hand-carried "knee boards."

These pilots are of the "new breed." With the exception of their commanders (who are all World War II veterans), they are graduates of the Korean or post-Korean era of flying training. None had ever flown anything but supersonic jets, and none had any desire to fly anything but the hottest and the sleekest jet fighters.

Their mission today? Fly to an unknown area, seek out and destroy a target hidden somewhere among the desolate hills of the battle area.

This was *William Tell 1960*, the seventh biennial Tactical Fighter Weapons Meet which brings top-notch crews from tactical fighter wings throughout the world to Nellis AFB, Nev. Here they would test their

skill in competition designed to simulate, as closely as possible, the actual conditions that might be encountered in a real war.

The questions these pilots asked themselves were not dissimilar to those they might ponder if a real enemy were pressing through the Nevada desert.

"Can I pinpoint the spot?" "Will I be able to hit it if I do find it?" "What if I don't make my time-on-target?"

But these questions merely emphasized the sincerity of purpose of these men. They would not be here if there were any doubt about their abilities. These young fighter pilots came to Nellis only after an exhaustive period of competitive eliminations held at their home stations. They were the "top guns" in their own organizations.

After a routine and almost automatic check of the airplanes the pilots were strapped in their fighters, ready to go. They received their clearances and, one by one, taxied to the runway.

The ground crews gathered, hands in their pockets, to watch. The planes inched forward. There was a deafening roar and a stream of pointed flame shot from the tailpipes as powerful afterburners were lighted. In seconds they were airborne, on their way to the target area. The time was exactly 0545. The sun was getting its first hand-hold on the rim of the mountains surrounding the desert floor.

Almost Like Combat

If this were a foreign country where aggressive forces were on the move against the Free World, these men may well have been part of a Composite Air Strike Force. They might have spanned oceans in a nonstop flight, landed and been ready for action, all within a few short hours. Or they might have been overseas-based tactical units of NATO, or SEATO, alerted and flown to the troubled area in minutes.

"Have Gun, Will Travel" receives her ammunition load before taking to the sky.

Targets were situated in remote locations somewhere in the desolate stretches of Nevada and Arizona desert.

The way the crews prepared for and went into action at Nellis was not much different from the way they would function in an actual situation. This is the big difference, the significant difference, between *William Tell '60* and previous meets.

No easily recognizable ground targets were erected at old, familiar gunnery ranges. A pilot never flew the same route twice to a designated target area, and no old, pock-marked bombing ranges were selected during this week-long competition.

The targets were simulated tanks, trucks, missile complexes, troop bivouacs or gunnery emplacements. All target locations were closely guarded secrets until the meet began. Some were not disclosed to the pilots until as little as three hours prior to scheduled takeoff times.

For the first time in a tactical fighter weapons meet, Army ground liaison officers briefed the competing teams on simulated ground situations. Each team also furnished its own forward air controller (FAC) to direct their fighters in on close air support missions—just as a squadron would do on an actual combat strike.

Every conceivable facet connected with fighter operations was graded during *William Tell 1960*. Where the bombs or napalm actually hit was the primary concern, of course, but support and logistic operations were graded also. Ground crews were watched carefully. If an aircraft couldn't make a mission because of some malfunction, the team was penalized. A team lost total points if a gun failed to fire or if a napalm tank failed to ignite upon impact. No special gimmicks or individual tricks could be employed by one team to give it an edge over the other competing teams, regardless of how ingenious they might be. Hard work, professional knowledge and competitive spirit are what paid off at this weapons meet.

Armament specialists inspect wiring on a HV

Assured he has the correct number of rounds, an armament specialist loads them into one of two ammunition cans carried by the F-100. For meet purposes, each Super Sabre ***carried two belts of 50 rounds each. Guns are 20mm.*** Vulcan ***cannon.***

Tough Grind

To judge these teams effectively in every operation of tactical fighter weapon systems, the meet was divided into three categories: air-to-ground, air-to-air, and nuclear weapons delivery.

The air-to-ground phase included close air support and interdiction missions. In the close air support missions, pilot forward air controllers were flown to the target area the evening before the scheduled mission. The success of each team hinged upon the ability of the FAC to effectively guide the fighters into the target area. This was done with grid charts and any significant landmarks the FAC could use to direct the fighters.

In the interdiction phases, pilots "dead reckoned" to preselected target sites in the desolate wastes of southern Nevada and Arizona. This was no snap. The hills, mountains and canyons of the vast American desert look remarkably similar from any altitude.

For the nuclear weapons combat missions, pilots were given profiles which led to a target no larger than a small bulldozed spot on the side of some hill; not too dissimilar in appearance to a secluded, hardened missile site. Pilots had a plus or minus 30 seconds to deliver their "weapons." If they were as much as two minutes late "on target" it meant a zero for that mission. Included in these missions was a *low-low-low* profile, the most difficult and trying of all to fly. This mission required the pilot to take off, fly at a treacherously low altitude along the desert floor, up canyon

...et, used as target for the GAR-8 **Sidewinder.**

draws and over crests of jagged mountain tops to some preselected, isolated target, make a sharp pull-up LABS delivery and return, still on the deck, to home base. Again, the actual target was nothing more than some small site marked, almost as an afterthought, on the side of some hill or on the desert floor. It was indicative of the overall success of the entire weapons meet that all pilots found their targets within the grueling time limits and all made successful "weapon" deliveries.

The air-to-air competition was composed of two missions against the *Dart* aerial target, and two GAR-8 *Sidewinder* missions. In the *Dart* competition, the tow aircraft took evasive action. Because of its aerodynamic shape, the *Dart* duplicated the maneuvers. Pilots needed to get only one round into the small turning, diving, evasive *Dart,* to score a kill. Each firing aircraft had only 100 rounds of ammunition on these missions.

In the GAR-8 *Sidewinder* competition, the firing aircraft flew with the target aircraft. The target aircraft fired a five-inch high-velocity aerial rocket and made a sharp break off. The firing aircraft then tracked the target rocket momentarily and fired his *Sidewinder* which streaked into the target rocket for the kill.

The Power and the Proof

Although scoring is necessary in almost any kind of competition, the significance of *William Tell 1960* was the week-long demonstration of the tremendous potential of tactical fighter aircraft. Their versatility and adaptability give tactical air forces a power punch unparalled in history. Time and again TAC has proved that single-engine, single-place fighter aircraft can travel halfway around the world, and deliver practically every type of weapon now in the Air Force inventory.

The deadly effectiveness of the weapon systems used at Nellis demonstrated that as a force for meeting the small or limited war threat, tactical airpower cannot be beat.

TAKING THE HONORS

THE five teams that competed in this event represented the top fighter pilots and ground support crews from tactical units around the world. Representing the Pacific Air Force (PacAF) was the 18th Tactical Fighter Wing from Kadena, Okinawa, captained by Col. James A. Wilson. From the United States Air Forces Europe (USAFE) came the 20th Tactical Fighter Wing from Wethersfield, England, captained by Col. J. T. Robbins, America's seventh leading fighter ace. Tactical Air Command was represented by the 474th Tactical Fighter Wing from Cannon AFB, captained by Col. Perry M. Lusby; the 479th Tactical Fighter Wing from George AFB, led by Col. George I. Ruddell, also a fighter ace; and the 4520th Combat Crew Training Wing stationed at Nellis AFB, led by Col. Ralph F. Newman.

Taking top honors as overall meet winners was the 4520th Combat Crew Training Wing from Nellis AFB, Nev., with an overall total of 48,806 points. The highest scoring tactical unit (this refers to a unit which deployed from an overseas area to compete in the meet) was the 18th Tactical Fighter Wing from Kadena, Okinawa, with 47,612 points. The 4520th CCTW were also the high scorers in the high explosive events and the 18th TFW took the trophy as high scorers in the nuclear weapon delivery events.

Col. George I. Ruddell walked away with awards for the team captain with the highest total points and high scoring TAC team captain.

Capt. Aubrey C. Edinburgh of the 4520th CCTW literally stole the show with the remaining three pilot trophies: the team member with the overall highest total points, highest total points in the high explosive events, and highest total points in the nuclear weapons.

For his outstanding performance in support of his winning team, SMSgt. Alvie A. Stogsdill, line chief for the 4520th CCTW, was awarded the Winning Team Support Element Trophy.

SLANTS ON SPACE

The light the Sun sheds on the Earth makes our globe cast a long, conical shadow out into space for a distance of some 900,000 miles.

The Moon's swing through this darkening cone on March 2 brings the first of the two partial lunar eclipses which 1961 will see. The spectacle will be visible in part from most of North America, as well as from Australasia, Asia, the Pacific and Indian Oceans.

Actually, the cone's darkness is not uniform. In the central or true shadow of the Earth all direct illumination from the Sun is cut off from the Moon. This core portion of the shadow is called the umbra, an adopted Latin word meaning shadow or shade. Surrounding the umbra is a much broader zone of lesser dimness—lesser because it receives some illumination from a portion of the Sun's surface. The term for this outer zone is penumbra—the three initial letters are from the Latin adverb for "nearly" or "almost," and thus qualify the nature of the shadow (or umbra) prevailing.

In a total eclipse the Moon's orbit must take it through the true central shadow, the umbra. In a partial eclipse, the Moon does not pass entirely through the central shadow and some portions of the lunar face earthlings see will remain outside its darkness in the penumbra.

At the edge of the penumbral region where the Moon starts into eclipse, total or partial shadow is dim and amateur observers may find it difficult to detect. The penumbra darkening effect increases progressively as the satellite moves toward the central shadow.

(To an astronaut on the Moon's surface, incidentally, the March 2 event would appear as a partial eclipse of the Sun.)

ZI observers can catch only parts of this partial lunar eclipse. For the Eastern Standard Time area, the Moon will have set before the show starts. Viewers in the Central Time zone and westward can see various phases but even those along the Pacific Coast will miss the ending because the Moon will have set for them before this comes. Anyone on duty in Alaska or north polar sites can watch this terminal phase, however, for over this region the eclipse ends.

The placing of an artificial satellite in orbit around the Moon will pose a nicety in correct terminology of many airmen in numerous grades, from the high to the relatively new recruit. It sums up in the question: When is an eclipse not rated an eclipse in scientific nomenclature?

We know that when the Moon passes through the Earth's shadow the phenomenon is properly called an eclipse, whether total or partial. However, most times when the satellites of Jupiter, Saturn, or other members of the Solar System with moonlets disappear as their orbits take them behind the respective faces of those planets visible from our globe, the phenomena is scientifically described as an occulation, a synonym for such words as concealing, hiding, etc.

The term is used when one heavenly body temporarily vanishes behind another which is seemingly but not necessarily much larger. For instance, our Moon often passes between the Earth and gigantic star formations, temporarily occulting or blacking out the latter.

The distinguishing feature of a true eclipse is that a satellite must pass through the shadow cast by its planet. The nature of the satellite's orbit is thus the determining factor as to how often a real eclipse can occur. In a sense, an eclipse of the Sun is an occulation but that term is not used when the phenomenon involves Old Sol.

Research to date has been able to develop evidence that of all the natural satellites in the Solar System only one possesses a detectable atmosphere of appreciable importance. This is Titan, No. 6 in orbital altitude of the nine moons which circle the ringed planet, Saturn. Titan's atmosphere is made up principally of methane and ammonia, the same gases which are the chief components of Saturn's atmosphere. The coincidence of atmospheric similarity has led to scientific speculation whether it may hold some clue to a close relationship in the manner these two celestial objects were originally formed.

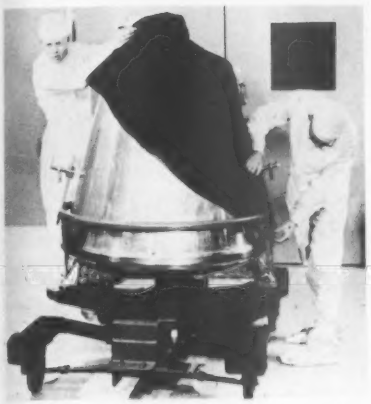
An "underground" Moon has no connection with secret resistance or subversive operations. It is an Americanism for a Moon which changes its phases in the hour between midnight and 1 a.m. Believed an expression invented by seafaring men, it may have originated on Massachusetts' Nantucket Island, noted over a century ago as a major home base for some of the country's whaling fleets.

To observers relying on the naked eye planets in the night sky do not usually appear to twinkle like stars in the same portion of the heavens. While this is not an infallible guide for distinguishing between the two, it seems to work often enough to pose a puzzle for scientists. The twinkling of stars, we know, is an optical effect due to various disturbances in the atmospheric sea their light must penetrate to reach the Earth. The catch, of course, is that the apparently non-twinkling light from visible planets also passes through the same unstable layers of atmosphere before reaching the eyes of earthling sky watchers.

—WILLIAM A. KINNEY

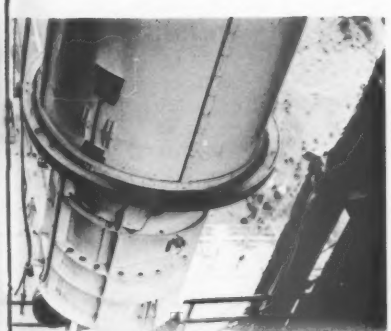
they create, then wait

Photos courtesy Lockheed Space and Missiles Division

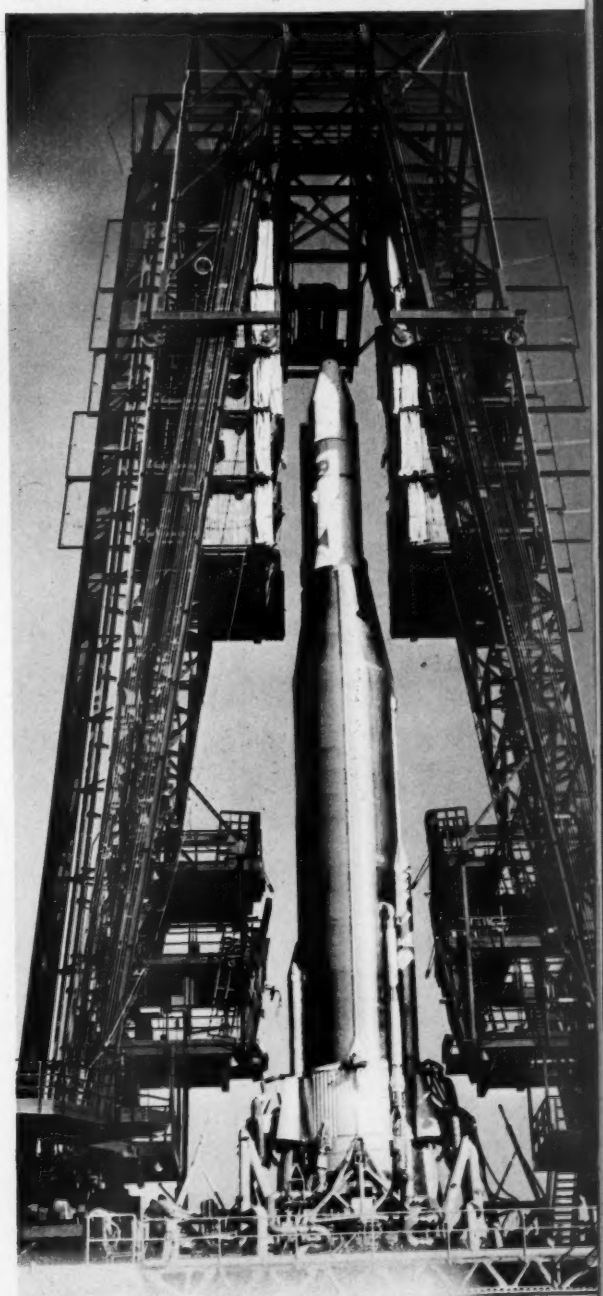


ready the nosecone in sterile labs

preflight is precise and painstaking



mate the satellite with booster



raise them, stand ready.

blast off! weird antennas track and communicate. they acquire data t

where is it?

will it orbit?

how soon will we know?

over coffee and cigarettes

and charts and tv screens

they sweat it out,

the planners,

technicians, and scientists.

they wait, they tal pr

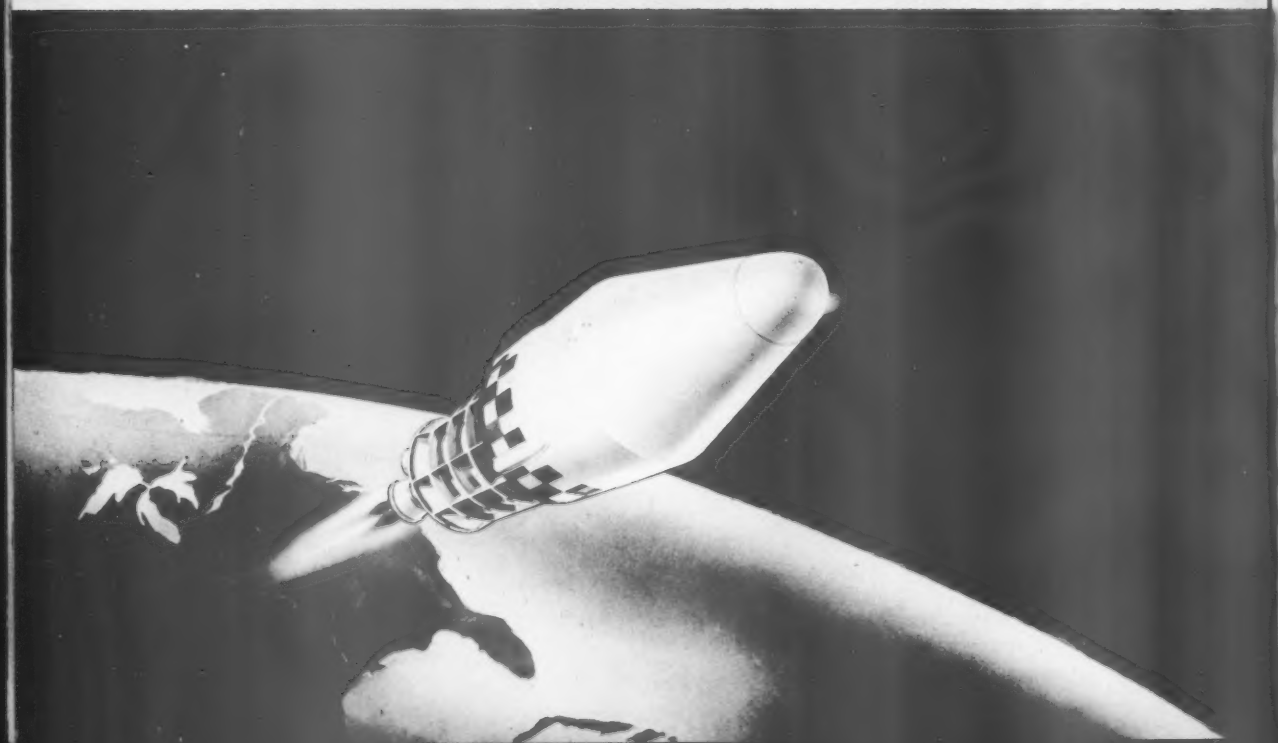
quirata to feed the minds of men.

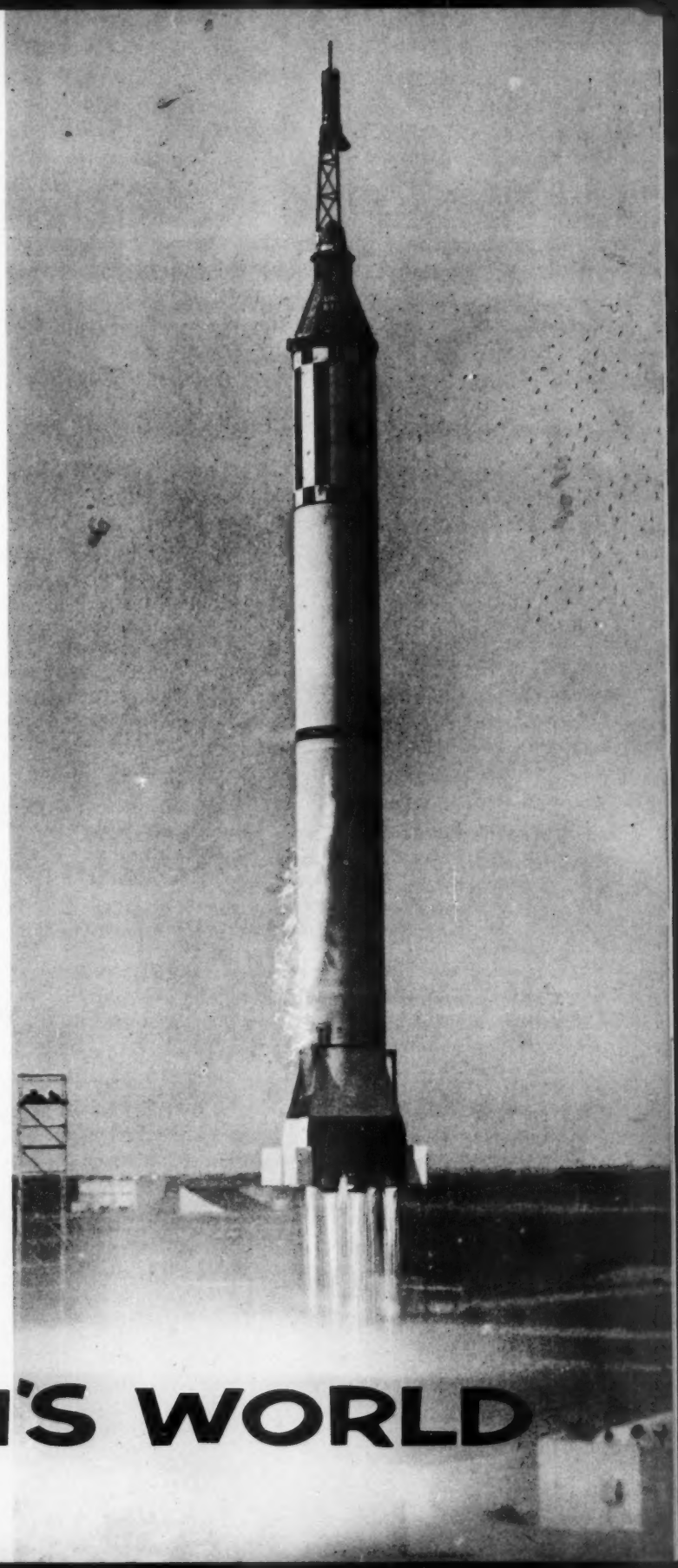
ey tay pray, while time unhurriedly ticks off eternity.

she's in orbit!

we did everything right.

now in the next one we will . . .





PROJECT MERCURY *took another giant step toward placing a man in orbit last December when an unmanned capsule, shown above, was fired 135 miles high and more than 200 miles down the Atlantic range. Within weeks, a similar shot, with a chimpanzee aboard, met with equal success. One of the seven astronauts is expected to follow this same trail in the near future.*

NASA PHOTO

AIRMAN'S WORLD

A FULL-SCALE MODEL *of the Bell-designed D188A supersonic VTOL fighter-bomber was recently unveiled in Buffalo, N. Y. Developed under joint Air Force-Navy contract, the single-place fighter boasts six turbojet engines. One is mounted at each wing tip and may be utilized for either vertical or horizontal flight. The other two pairs are installed in the fuselage—two horizontally in the rear, two vertically in the fore section. Bell engineers expect the aircraft to be capable of transition to horizontal flight from vertical takeoff in less than 60 seconds. They claim equal capability for transition to landing configuration.*

FIGHTER DEPLOYMENT

Scheduled deployment of all-weather F-105D *Thunderchiefs* to Europe this year has been preceded by the shipment of a variety of support materials and equipment.

Most recent addition in planning was the airlifting of 68 mobile training units to Bitburg AB, Germany. Accompanied by a detachment of 12 instructors, the units will help train maintenance crews for the new aircraft.

TRANSPORT ORDER

A letter contract calling for construction of 16 C-130E *Hercules* prop-jet transports has been awarded to the Lockheed Aircraft Corp.

Delivery of the first of these new aircraft is expected early next year. The initial award was the first step in a $170 million MATS modernization program which is scheduled for completion within the next two years. Contracts for additional aircraft are expected to be let in the near future.

Addition of the new transport will provide MATS with an effective long-range transport capable of fast, worldwide airlift missions. If required, it will also be usable for paratroop or heavy airdrop operations. Finally, its comparative short-field landing characteristics will allow it to put troops and weapons into areas of the world presently not equipped for MATS operations.

With full MATS fuel reserves and carrying combat equipment, the C-130E can airlift 27,500 pounds of payload nonstop across the Atlantic. It can lift 33,000 pounds nonstop from the West Coast to Hawaii against headwinds up to 58 m.p.h.

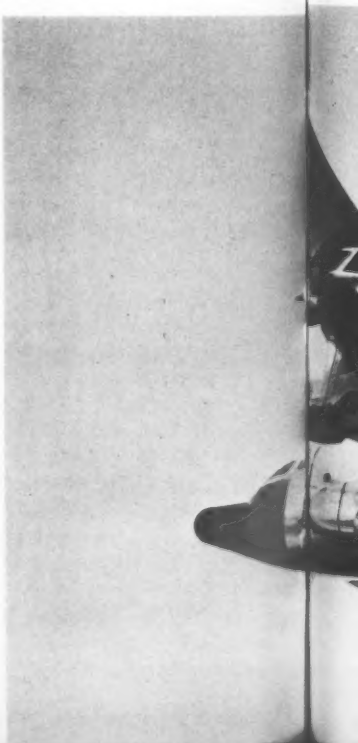
H-MODEL DELIVERIES

Deliveries of new B-52H *Stratofortresses* to six specified wings are expected to be completed by July 1962 according to Strategic Air Command.

First on the list is the 379th Strategic Wing, presently at Homestead AFB, Fla., but scheduled to relocate at Wirtsmith AFB, Mich., within weeks.

The five additional units are 28th

FIRST AIRCRAFT *designed to airlift four drones simultaneously is the Lockheed GC-130A* Hercules. *With four Ryan Q2-C* Firebees *slung beneath its wings, the launcher-director can climb to 30,000 feet before making its release. The remote-controlled drones can then be sent to 60,000 feet where they can test ADC's men, missiles, and aircraft by simulating enemy action.*



Bomb squadron, 19th Bomb Wing, Homestead AFB, Fla.; 526th Bomb Squadron, 4133rd Strategic Wing, Grand Forks AFB, N. Dak.; 93rd Bomb Squadron, 4329th Strategic Wing, Kincheloe AFB, Mich.; 30th Bomb Squadron, 4042d Strategic Wing, K. I. Sawyer AFB, Mich.; and the 525th Bomb Squadron, 4136th Strategic Wing, Minot AFB, N. Dak.

Principal change in the newer H-models is the installation of turbo-fan engines. Their use is expected to provide a 30 percent increase in takeoff thrust while eliminating the use of water injection systems. The new engines greatly increase the non-refuel range. A B-52H, with a full bomb load and two air launched *Hound Dog* missiles recently completed a 10,000 mile non-refueled flight.

Addition of the *Skybolt* air-to-surface missile will also measurably increase the new B-52's offensive capabilities.

AIRBORNE EDUCATION

USAF officials are cooperating with civilian educational specialists in the current "Mid-West Airborne TV Instruction" experiment.

In conjunction with the Ford Foundation, regional public schools, and a number of area educational television stations, the Air Force is assisting in the design and development of this large-scale scholastic classroom program.

Arithmetic, science, and history are being beamed earthward from circling aircraft. These classes are then picked up by TV stations throughout a six-state midwest area and, in turn, transmitted to classrooms in the area on regular schedules.

The programs, which reach as many as 70,000 students, began January 31 and will continue through May. If the concept proves successful, it may be adopted in other sections of the nation.

DRIVER TRAINING TOO

USAFA's 1961 graduating class will leave the Academy well versed in more than flight, engineering, and the humanities.

A special four-and-a-half-hour driver seminar has been added to the senior year under the sponsorship of the Cadet Automobile Committee. The unit is comprised solely of Cadets, but is chaired by Capt. Harry E. Dunivant, commander of the First Cadet Wing Squadron.

Conducted by Denver Municipal Judge Sherman Finesilver, members of the Denver Police Department and the Colorado State Patrol, the course defines driver problems and techniques. It includes an explanation of state, national and international traffic signals, a film on freeway driving and a lecture on traffic law enforcement.

HOVERBUG HEROES

Two USAF helicopter pilots used their H-43B in a unique manner recently to prevent what could have been a major disaster.

Alerted to the emergency, Capt. Howard J. Cochran and Lt. Donald Courture took their whirlibird aloft to watch over a damaged B-52 which was approaching Larson AFB, Wash., for a landing.

On final, the big bomber suddenly dipped its right wing, damaged in a mid-air refueling collision, and skidded into the ground. Almost immediately, the plane burst into flames.

Cochran and Courture moved their H-43 directly over the blazing aircraft, hovered and used their rotor downwash to fan the fire away from fuel tanks which had not yet ignited.

Despite an explosion which blew them clear of the area, the heroic pair returned to the battle while ground rescue crews evacuated the eight B-52 crew members. All survived.

ARMY TEST PILOTS

USAF's Experimental Flight Test Pilot School recently graduated a select seven from Edwards AFB, Calif.

The unique group was composed of Army aviators, the first to receive aircraft testing instruction there, and the first ever to be formally schooled as Army experimental test pilots.

In addition to the same highly technical eight-month course taken by Air Force students, the Army men received instructions in rotary wing aircraft. The standard curriculum includes some 230 hours of classroom instruction, 350 hours of data reduction and report writing, and 130 hours of flying.

FINAL TETRAHEDRON *for the roof of USAFA's chapel was lowered into place recently at Colorado Springs, Colo. Last of 100 required to construct the chapel roof, its girders, like those of its 99 mates, will be covered with aluminum and stained-glass panels which will suffuse the interior worship area with multi-colored light.*

MESSAGES FROM THE MOON *is the aim of NASA's* Ranger *spacecraft shown in this artist's conception. Designed to telemeter vital scientific information to earth from the moon and its environment, the 300-pound capsule will be launched via an* Atlas-Agena B *sometime within the next two years. Scientists at Ford's Aeronutronic Division in California are currently simulating the 500-degree temperature range to which the unit will be subjected once it reaches its destination.*

BITS OF BLUE

... Two command-wide contests, covering a period of more than six months, were held before final selection and adoption of ATC's new command motto—Prepare the Man.

... The March cycle of Airman Proficiency Tests calls for testing in 11 career fields. Included are 20 (Intelligence), 24 (Safety), 27 (Air Traffic Control and Warning), 29 (Communications Operations), 31 (Missile Guidance and Control Systems), 46 (Munitions and Weapons Maintenance), 47 (Motor Vehicle Maintenance), 56 (Utilities), 60 (Transportation), 62 (Food Service), and 73 (Personnel). Overseas tests will be given during the period March 6-11; stateside during March 13-18.

... Air Force unit moves for the current calendar year have been expanded to include that of the 326th Bomb Squadron from Fairchild AFB, Wash., to Glasgow AFB, Mont., about the first of next month.

... Maj. James E. Anderson, Ellsworth AFB, S. Dak., has just completed his fourth term as chairman of the Rapid City Chamber of Commerce's Aviation Committee. Major Anderson is a B-52 aircraft commander and Chief of Current Operations with SAC's 821st Air Division.

... SSgt. Pedro Trujillo, McClellan AFB, Calif., recently received word that his design for a 50-yen Japanese coin, entered in national competition while stationed in that country, placed third. He was awarded a 5,000-yen ($14.00) grant for his effort.

... USAF recently awarded the Martin Co. a $140,000 contract for study of a spacecraft designed for maintenance and rescue missions and ferrying of men and supplies from earth to orbiting space stations.

... Interested in a blueprint of the B-52? Which one? Officials at the Engineering Data Service Center, Edwards AFB, Calif., indicate they have no fewer than 150,000 on hand. They cover everything from the tiniest nut to a gigantic wing panel.

You Ask It

In answer to numerous requests, here is a rundown on new regulations and recent changes of widest USAF interest.

AFR 34-14, 30 September 1960, *Air Force Aero Clubs*. Contains revised information on the establishment, operation, and membership of such clubs.

AFR 34-65, 18 October 1960, *FHA Guaranteed Home Loans for Servicemen*. Defines current eligibility and methods of application for a *Certificate of Eligibility* for financing or constructing a home under Section 222 of the National Housing Act.

AFR 36-12A, 5 October 1960, *Administrative Separation of Commissioned Officers and Warrant Officers of the Air Force*. Details extensive changes to the basic regulation of 1 July 1960.

AFR 36-23, 12 September 1960, *Officer Career Management*. Provides broad guidance for the utilization and career development of active duty USAF commissioned officers and those of the Air Force Reserve.

AFR 36-68, 29 September 1960, *Promotion of Reserve of the Air Force Officers Serving in Higher Temporary Grades*. Outlines procedures for permanent promotion of Reserve of the Air Force officers from captain through colonel while serving in a temporary higher grade.

AFR 39-9A, 19 October 1960, *USAF School Retraining Programs*. Details changes in the voluntary school retraining program for enlisted personnel.

AFR 39-14A, 13 September 1960, *Separation for Convenience of the Government*. Contains major changes which have occurred since publication of the basic regulation in March 1960.

AFR 39-19, 26 September 1960, *Selective Reenlistment of Airmen With 20 or More Years Active Service*. Establishes the policy and prescribes procedures for selective reenlistment of airmen in this category.

AFR 53-15, 31 October 1960, *USAF Schools*. Outlines the general provisions covering all USAF schools except the United States Air Force Academy.

AFR 60-2A, 26 October 1960, *Annual Flying Requirements*. Contains changes in waivers and special conditions as outlined in the basic regulation of April 1960.

AFR 110-12, 31 October 1960, *Foreign Criminal Jurisdiction over U. S. Personnel*. Explains the reporting by overseas commanders of foreign jurisdiction over USAF military personnel, civilian employees and dependents. This regulation implements an earlier DOD directive.

AFR 111-6, 21 October 1960, *Airmen Sentenced to Discharge, Confinement or Hard Labor Without Confinement*. Implements Title 10, United States Code, concerning reduction in enlisted grade on approval of certain court-martial sentences.

Air Age Library

HISTORICAL

Louis L. Snyder has authored an excellent history of WW II entitled *The War: A Concise History, 1939-1945*. It covers the events preceding the war, the fighting, peace treaty negotiations, and the war crimes trials. Julian Messner ($7.95).

The editors of Year, Inc. have collaborated on *Historical Decade: 1950-1960*, ($7.95). It contains the photos and stories of the events that shaped the world during the last decade.

Martin Caidin has authored an historical reconstruction of the famed raid of October 14, 1943 on the Schweinfurt ball-bearing center in *Black Thursday*, released by E. P. Dutton ($4.95).

BIOGRAPHIES

Dick Bong: Ace of Aces, Gen. George C. Kenney, USAF (Ret.). The biography and combat story of America's leading ace by one of the men who knew him best, his area commander. (Duell, Sloan and Pearce, $2.95).

First of the Spacemen: Iven C. Kincheloe, Jr., by James J. Haggerty, Jr. It recounts the life of this outstanding USAF test pilot with special emphasis on his role in the X-2 program. (Duell, Sloan and Pearce, $3.50).

Stories of the great aces of WW I are the feature of *The Aces*, by Frederick Oughton. It features both Allied and German fliers and covers development of air armament, tactics, and aircraft. (G. P. Putnam's Sons, $4.95).

The graphic account of the seven men scheduled for orbital flight and a rundown of the program itself are the subjects of *The Astronauts: The Story of Project Mercury*, Martin Caidin, (E. P. Dutton, $3.95).

PAPERBACKS

The Longest Day, Cornelius Ryan, Crest.

The Rise and Fall of Hermann Goering, Willi Frischauer, Ballantine.

The Exploration of Space, Arthur Clarke, Fawcett.

What's Ahead in Space, Congressional report reprint, Grosset and Dunlap.

The War Lover, John Hersey, Bantam.

Foreign Policy, The Next Phase, Thomas K. Finletter, Praeger.

A Torch to the Enemy, Martin Caidin, Ballantine.

They Flew the Atlantic, Robert de la Croix, Monarch.

Men Into Space, Murray Leinster, Berkley.

The Crowded Sky, Hank Searles, Dell.

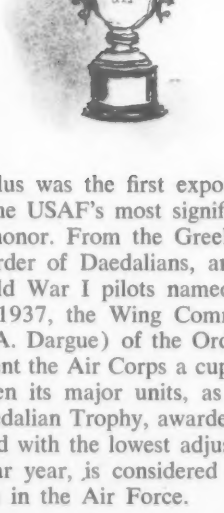
perils & plights of pilots

The Daedalian Trophy

Greek mythology has it that Icarus, son of Daedalus, fled with his father on wings to escape the resentment of Minos, but the sun melted the wax that cemented his wings and he crashed to his death in the Aegean Sea.

The mishap occurred after Daedalus had warned Icarus about flying too close to the sun:

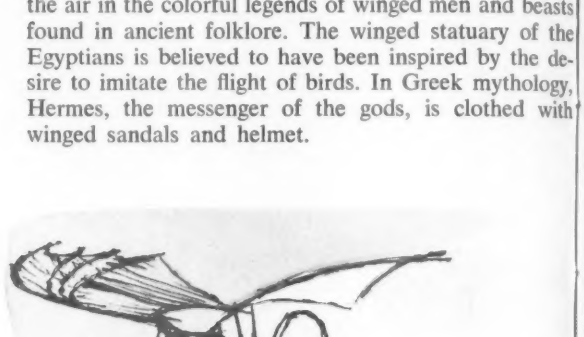
"My Icarus!" he says, "I warn thee fly
Along the middle tracks: nor low, nor high;
If low, the plumes may flag with ocean spray;
If high, the sun may dart his fiery ray."



Since Daedalus was the first exponent of safety in flight, one of the USAF's most significant awards was named in his honor. From the Greek myth the story shifts to the order of Daedalians, an organization of American World War I pilots named after Daedalus. On March 3, 1937, the Wing Commander (the late Maj. Gen. H. A. Dargue) of the Order of Daedalians offered to present the Air Corps a cup for competition, possibly between its major units, as a safety trophy. Today, the Daedalian Trophy, awarded annually to the major command with the lowest adjusted accident rate for the calendar year, is considered one of the most coveted awards in the Air Force.

The Dreamers and Earlybirds

Looking back from the vantage point of 1961, one can only marvel that the first flight of an airplane hadn't happened long before it did. The idea of human flight had excited man's imagination for thousands of years. From stories and legends handed down through the years, we now know that even from earliest times people dreamed of flying. There are visions of conquering the air in the colorful legends of winged men and beasts found in ancient folklore. The winged statuary of the Egyptians is believed to have been inspired by the desire to imitate the flight of birds. In Greek mythology, Hermes, the messenger of the gods, is clothed with winged sandals and helmet.



Leonardo da Vinci, the great Italian artist and scientist who lived in the fifteenth century, spent years experimenting with the idea of flying. He made sketches of wings to be fitted to the arms and legs of a man. Da Vinci's plan was soundly worked out. His idea that the wings of a flying machine should be patterned after the wings of the bat found expression in the doped fabric wings of our early airplanes.

Today aviation is such an accepted fact that we sometimes forget how men from different parts of the world had to work and sweat, suffer hardships, face ridicule, and even give their lives that flying might become possible.

There was, for instance, the French locksmith named Besnier. In 1678 he constructed a curious flying machine consisting of two wooden bars that rested on his shoulders. At the ends of the bars he attached muslin wings arranged to open on the down stroke and close on the up stroke. Besnier operated the wings by moving his arms and legs. Although he realized that no man had sufficient strength to fly as the bird flies, he did sense part of the truth—that gliding with air currents was possible. During his experiments he is said to have jumped from a window sill, glided over the roof of a nearby cottage, and landed on a barge in the river.

First Successful Attempt to Fly

The first successful attempt to fly was made in France on June 5, 1783, when the Montgolfier brothers demonstrated their hot-air balloon. It rose to the height of one thousand feet and remained aloft ten

minutes. Benjamin Franklin, then in France, witnessed a flight of the Montgolfier balloon and referred to it in his chronicles.

Cayley's Kite

In 1808 an Englishman named George Cayley conceived the idea that a kite could be built large enough to carry him up in the air. Instead of a string to hold the kite against the wind he decided to use the weight of his own body. He constructed a huge kite with a sustaining surface of 300 square feet. When Cayley held on to it and ran against the wind, the kite actually did lift and carried him some distance through the air. Although he didn't realize it at the time, what Cayley had invented was the first glider and the very beginning of the modern airplane.

Amazing and wonderful though it may have seemed to him, no one paid any attention to Cayley's discovery until 1867. That was the year when another Englishman named F. H. Wenham came to the conclusion that if a glider were attached to a propeller driven by an engine it would fly. Wenham was right, of course, but he left his fine logic for other men to use. However, he did leave something else by which we remember him. He coined the word *aëroplane*. He took the Greek word aero, meaning air, and joined it to the Latin planus, meaning flat. The British still use the word *aëroplane;* Americans prefer the simpler form *airplane*.

In 1876, a young Frenchman named Alphonse Penaud, read an article that ridiculed man's presumptuous attempts to fly. This angered the boy and he determined forthwith to conquer the air. Though lack of money balked his ambition, he constructed a number of models which contained many features found in present day airplanes. Penaud was the first to use an elastic band to power his model, as boys do.

About this time an American named Laurence Hargrave made the first studies of the cellular or box-kite type wing construction. Hargrave confined his efforts to building models. But his work influenced the work of others.

Otto's Winged Bat

One of these others was a German interested in flying experiments. His name was Otto Lillienthal. In 1890 he built for himself a queer looking glider which resembled nothing so much as a bat with huge wings. Lillienthal implemented da Vinci's original idea. He was influenced by Hargraves' box-kite wing construction. To his bat wings Lillienthal added a tail-like rudder for steering. To support him on the glider he added a pair of struts similar to the arm rests of crutches. Lilljenthal would run down a hill into the wind with his glider. When sufficient speed had been attained, the glider and Lillienthal would rise triumphantly into the air. He learned to travel fair distances. His ambition was to put an engine on the glider. He designed a 2½-pound engine and mounted it on a biplane. But before trying his new machine, Lillienthal decided to make a short flight in his old glider. And then it happened. Somehow the glider stalled, one wing dropped off, and the whole thing fell to the ground carrying Lillienthal to his death. His powered machine was never tried. However, other men believed that Otto Lillienthal had been correct in his idea of flying. His death did not stop their experiments.

Patterned After a Sea Gull

About this time in the U. S. a young man named John J. Montgomery, who was fresh out of college, built a glider patterned after a sea gull. Montgomery worked alone. A timid fellow, he tried out his glider from a hill near his home at three o'clock in the morning. He feared onlookers would laugh at him if his glider failed. It didn't fail. Montgomery made a flight of 600 feet—the first of many successful flights. He solved many of the problems of flight with little or no funds or encouragement. Because he worked alone and was almost unknown until recently, few written records of his work are available.

All through the 19th century men continued their experiments in order to bring to reality the dream of human flight. With each generation they moved a little closer to the secret. But they never quite grasped it—not yet. The story of the heavier-than-air machines that flew really begins in the U. S. in the early 1890s. It was then that Octave Chanute, born in France and reared in the U. S., approached the problem of flying machines scientifically. A thorough scientist, Chanute followed the progress of all flight experiments the world over. He built gliders with one, two, even five pairs of wings and tested them on the sand dunes of Lake Michigan. Chanute's most successful glides were made with a biplane glider. In 1894 he published a book called *Progress of Flying Machines,* which covered all the efforts of men like himself who had experimented with man-carrying gliders. Publication of this book is credited with bringing to this country the distinction of being the birthplace of the first successful, man-carrying, power-driven flying machine. The reason: A copy of Octave Chanute's book fell into the hands of two ambitious and enterprising young men. Their names? Orville and Wilbur Wright.

—DAVE KARTEN

You should know

IS YOUR HOMETOWN IN THE BIG TEN?

When the final figures gathered in the 1960 census were at last completely tabulated they revealed that New York is still the biggest city in the U. S. with a population of 7,781,984. Other members of the Big Ten in descending order of magnitude: Chicago; Los Angeles; Philadelphia; Detroit; Baltimore; Houston; Cleveland; Washington, D. C.; St. Louis.

But the experts in population growth predict that in 1961 Houston will move ahead of Baltimore, and Milwaukee will replace St. Louis as a member of the Big Ten.

WATER HAZARDS

With spring at hand it might be a good idea to plan on learning to swim this summer. Each year a substantial number of Air Force personnel are drowned in water sports accidents. Statistics state that 11 percent of Air Force officers and 22 percent of enlisted men would have difficulty in surviving a water mishap only 20 yards from shore.

DON'T PASS THE HAT

If you've been planning to take up a collection to buy the Old Man a suitable gift when he departs on PCS, better forget it. A Federal statute prohibits the donation of gifts to superiors, military or civilian—in precise and explicit language. "No officer, clerk, or employee in the United States Government shall at any time solicit contributions from other officers, clerks, or employees in the Government service for a gift or present to those in a superior official position; nor shall any such officials or clerical superiors receive any gift or present offered or presented to them as a contribution from persons in Government employ receiving less salary than themselves." There is more; even the little fellow who contributes to any such fund is guilty of violating the law. The penalty? "Every person who violates this section shall be summarily discharged from Government employ."

THE RED NETWORK

Communist international radio broadcasting has increased by 500 percent over a 12-year period. U. S. Information Agency reports that communist-bloc stations beam their message in 55 languages and are on the air for a total of nearly 3,000 hours per week. The propaganda barrage is notable for its flexibility. The pressure of persuasion or incitement is shifted periodically from one part of the world to another as the Communists seek to exploit the ebb and flow of international affairs. The number of secret stations aimed at particular target audience in Free-World countries appears to have declined as overt operations have increased. Most significant factor in the propaganda field is the spectacular expansion of activity by Radio Peking during recent years.

EDUCATION BY DEGREES

Most people know that college degrees include bachelor's, master's, and doctor's, but beyond that some of us are likely to be lost. And it is no wonder. The U. S. Office of Education reports that American colleges and universities now award more than 1,600 degrees with about 2,600 confusing abbreviations.

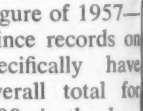
Many of the new degrees are a direct result of technological progress; others are shred-outs of standard degrees brought about by changes in the social structure. A good many, of course, are simply different names or different abbreviations for the same course of study. Engineering offers 348 variations, education 256, business 176.

Back in 1887, institutions of higher education in the U. S. could come up with only about 60 different degrees. Some of these, perhaps fortunately, have disappeared from the scene before the onslaught of progress. It is no longer possible, for example, for a young lady to become a Maid of Arts or Mistress of Polite Literature. These were used in an earlier age when it was considered somehow improper to refer to women as Bachelors. And no matter how hard he works, today's college man can no longer earn the elegant title of Doctor of the More Humane Letters.

POLIO SHOTS ARE PAYING OFF

The number of reported cases of poliomyelitis dropped sharply in 1960. U. S. Public Health Service, assembling final statistics for the year, reports that the total number for the year was 62 percent fewer than in 1959, and the number of paralytic cases was about 60 percent less. It is expected that the final total for paralytic cases in 1960 will be close to the figure of 1957—2,499—the lowest since records on paralytic cases specifically have been kept. The overall total for 1960, less than 3,300, is the lowest figure since 1938 when 1,705 cases were reported.

WHERE ARE YOUR DOGTAGS?



Some people keep them safely tucked away in the bottom of a footlocker or in a locked trunk along with the rest of the family jewelry. The regulation states that dogtags should be worn by Air Force personnel when outside the continental limits of the U. S.; when engaged in field training exercises or operations; and when traveling as crew member or passenger on an airplane.

—JOHN K. O'DOHERTY

HOW YOU CAN SAVE $$$ ON PCS

If the high cost of motels, hotels, and food makes you shudder when you get your PCS orders, here's a sure-fire way of cutting your expenses in half.

by Capt. Ted R. Sturm (USAF, Ret.)

WHEN AN Air Force lieutenant totaled the cost of moving his wife and four kids from a California base to one in South Carolina recently, he knew he would end up in the red; dislocation allowance, travel pay, corner cutting, and penny pinching notwithstanding.

For each of the six nights he spent in a motel, the tab for the family of six ran between 10 and 20 dollars. For the food his ravenous and growing youngsters consumed he handed over another $20.00 which when added to his and his wife's attempt to eat skimpily, seemed to top, inevitably, about $30.00 each day. No matter how he figured it, cut it, sliced it, or ignored it, the entire trip cost him nearly a thousand dollars—a good sized chunk of annual salary in anybody's book. You may have encountered a similar experience in the past.

The sad part of the lieutenant's story is that it was all so unnecessary. By a little advance planning and knowledge of the existence of almost "free" lodgings along his entire route, he could have made the trip for half the cost—maybe even less.

Contrast his experience with that of a staff sergeant who made almost an identical journey only a few weeks before the lieutenant began his luxury-class tour. Maybe you can profit by the comparison.

What the sergeant had that the lieutenant didn't have was one extra child, and complete information on two things:

The National and State Parks which dotted his entire coast-to-coast route and letters from the base housing officers of several Air Force bases spaced at strategic intervals between the parks.

The sergeant also had a tent, a cook stove, and a few basic camping supplies. Besides costing half of what the lieutenant's trip cost, the sergeant and his family had one big camping vacation enroute to the new station. And he made money on the move!

Today, National and State Parks have reached the point where most feature protected campsites complete with water and, in many cases, bathing and toilet facilities. In fact, since 1955 when the National Park Service began its plan called Mission 66, the parks dotting the nation have been steadily improved. You may have noticed the sign "Mission 66" on construction projects across the country. It identifies a conservation program designed to develop and improve the priceless national possessions of the American people by constructing

modern roads, camps, picnic grounds, and other fe
tures. Its estimated completion date is in 1966, hen
its designation.

But the National Parks are only part of the plan
how to have fun and save money on PCS. Natural
they are not sufficient in number to provide accomm
dations at the end of each day's travel. That is whe
the State Parks come in. And the State Parks ve
often match or surpass the National Parks in facilit

There are literally hundreds of these State Pa
across the nation. There are more than 500 in
eastern United States alone. To pick one at rando
Shady Lake Recreation Area in Arkansas is loca
about five miles north of Athens, just off U. S. Hi
way 70—a highway that has undoubtedly seen as mu
USAF PCS traffic as any in the country.

Here at this camp with the lazy summer-day na
a traveler can stay as long as he likes without char
The camp has a developed campground, running wat
electricity, bathrooms, showers, areas for trailers, te
or plain old station wagons.

There is a grocery store, hardware store, and refre
ment stand near by. All you have to take along i
roll of blankets for the kids, the wife and you, a thr
burner cook stove, and some kind of cover like a te
trailer, or the back end of the station wagon.

Well, most agree this isn't a particularly luxuri
way to travel across the United States, but if you co
afford luxury you wouldn't be interested in sav
money anyway.

If you plain don't like camping, try the sergea
number two plan—a list of Air Force bases.

Nowadays it is a rare route anywhere that doesn't you close to Air Force bases. And bases usually e guest houses, good for a one-night stand. Alugh these guest houses are primarily designed for t their name implies, i.e., use by guests visiting base or newly assigned personnel waiting to find rters, you can very often put yourself and the famup for the night. Sometimes you can just walk in, ey have a slack period, or sometimes, like the sernt, you can write ahead for reservations.

here is a danger here and you should be aware of f the guest house is the type that rates as governnt housing or quarters, you could lose one day's rters allowance. Remember your travel voucher als asks, "Were government quarters available?" st guest houses, however, are handled by the Army Air Force Exchange Service, or by nonappropril welfare funds. You simply check in with the CQ, eting Office, or what have you, pay a nominal fee ually a dollar per person per night) and enjoy a d night's rest.

ou save money on meals, too. You can eat at the cafeteria, the clubs, etc., and if you're real lucky might even hit a base during two-for-one night, he Happy Hour.

Home on Wheels

lieutenant colonel pulled into a western base the r day complete with a big smile, a wife and two , and a small 15-foot vacation trailer behind his mobile. Five years before this particular PCS he spent a little over a thousand dollars for that er, which he had since kept parked in his back yard. e had made three PCS moves since then, and figured the money he saved has paid for the trailer. It takes a little more gas to pull one, you have to drive a little slower, but you never worry about a place to stay or the cost of staying there.

"We pull on to one of those roadside parks so many states have, and fix our own lunch. At night, we stay at the State or National Parks, regular overnight trailer parks, or simply pull off the main road for a couple miles and park by a lake or stream," he explained.

"Besides saving many dollars, we have a royal good time."

He also uses the trailer for week-end jaunts, and sometimes for his vacations. "But the biggest feature is that period after you arrive at a new station and are hunting for housing. That can really eat into the bank account. With the trailer, we have a clean decent place to stay until our household goods arrive and until we find our new quarters."

Living in a hotel, motel, or rooming house until you find a place for the family can actually be a bigger expense on a PCS move than the cost of traveling. The colonel proved a trailer is a good answer.

There is only one problem to this whole theory of saving dollars on PCS. It's the one you married. Although the kids will think camping is great, the little woman is inclined to view PCS moves as a chance to "live it up"—a welcome respite from the ritual of daily dish and diaper duty. Unless she is the outdoor type, she won't take kindly to the same old chores under the open sky. But there is an answer. Tell her the money you save will make a down payment on a mink coat. If you play it real sly, you might even trap a couple of mink at one of the overnight campsites.

Airmen to the Rescue

How USAF rescue men won the "Battle of Davy Jones' Locker."

OFFICIALLY, the Air Rescue Service mission is the rescue of downed combat airmen.

But around the world, 24 hours a day, USAF rescue men stand ready to do anything in their power to assist military personnel or civilians in distress.

In its 15-year history, ARS has saved over 6,000 lives; given aid to over 10,000 persons.

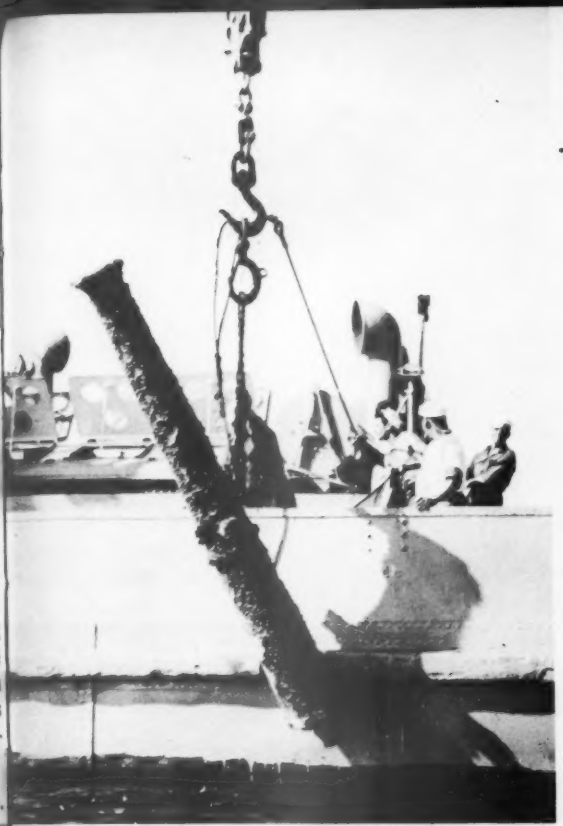
The effort has ranged from vast rescue and assistance projects to innumerable small gestures that win friends for America wherever ARS men are stationed. A recent incident in the Azores is a case in point.

It happened in Terceira, a rocky volcanic island in the Azores group. Three USAF skin divers, Lt. Robert H. Keggan, a rescue crew navigator; A2C Ronald D. Bull, an electronics repairman; and A2C Robert H. Johnson, clerk-typist, had heard a rumor that some ancient cannons were located in the bay near Angra Do Heroismo. A visit to the Regional Museum in the city of Angra gave them the facts.

In 1860 a tidal wave struck Monte Brazil washing part of the fortification and 15 cannons into the bay. And there they remained until two years ago when some English university students who were collecting marine life specimens in the Azorean Archipelago uncovered them. A recovery project was organized in 1959 but failed due to lack of qualified divers and rough seas. The Americans offered to try again.

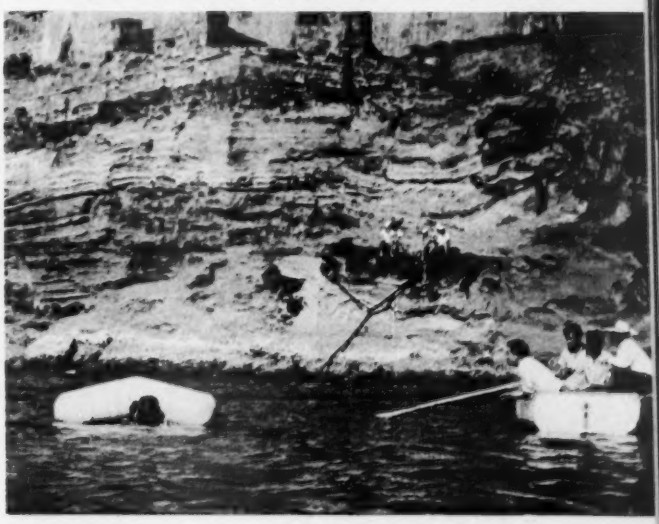
The museum personnel were elated at the prospect of possible recovery of the cannons for addition to the museum's collection. They immediately chartered a small powered fishing vessel to carry the skin divers and museum guard Manuel Renato, acting as inter-

Robert H. Johnson (left) checks gear for his companion Ronald Bull in preparation for descent into sea.



Power winch raises ancient artillery piece from its resting place at the bottom of Bay of Fanal.

In background are the fortifications from which tidal wave swept the cannons into the bay below.



preter, to the prospective diving area below the old fort. All three divers were equipped with scuba diving gear. The Portuguese boatmen knew the exact location of the ancient armor and within 10 minutes the divers had sighted the first cannon in a little over 100 feet of water. In all they sighted three cannons the first day. After "casing" the situation they agreed that recovery was very possible.

They returned to the surface, contacted Brig. Gen. George B. Dany, Commander, U. S. Forces, Azores, for his approval and the recovery operation was under way. The first cannon they tackled was about two-thirds buried in sand at a depth of 115 feet. Airmen Bull and Johnson directed the operation with the assistance of three additional skin divers, TSgt. Joseph C. Knuckolls, A2C Joe Scarantino, and Justin Adelstein, a Department of Air Force civilian. On "R" (for recovery) Day the Air Force divers attached chains to the first cannon. Then they asked the 7415th U. S. Army Transportation Terminal Unit, from Praia Docks, to furnish a barge equipped with a hand winch. The divers secured the chain to the bronze cannon and it was lifted from its century-old resting place to the deck of the barge.

Close examination disclosed that the cannon had been forged by the English in 1574 and placed in the fortification on Monte Brazil overlooking the Bay of Fanal. The cannon was carefully cleaned and proudly placed in the Angra museum as the first bronze cannon of their collection. And proudly displayed with the cannon: a plaque bearing the airmen's names.

After their initial success Airmen Bull and Johnson volunteered their continued services to help raise the remaining cannons. And 10 days later, operating from the side of a Portuguese Navy vessel, they secured chains to a second bronze cannon—this one forged by the French in 1576, and the power winch of the Portuguese Navy ship wrested it from its hundred-year-long berth in Davy Jones' locker. Other cannons, located and marked by Airmen Bull and Johnson, proved to be of Spanish and Portuguese origin. To date six cannons have been retrieved, cleaned, and placed on display at the Angra museum. Two others, located in the bay area, haven't been recovered due to their questionable value in view of their badly rusted and corroded condition.

After the recovery operation was successfully completed, the airmen were honor guests at a dinner given for them by the grateful Angra Regional Museum officials; and attended by Portuguese government officials.

The airmen are pleased that they were able to lend a hand. But they have no idea of resting on their laurels. Portuguese officials have just confirmed as fact another rumor. An old Spanish ship is reported to have been sunk in Angra Bay and they have suggested the possibility of investigating it after the cannon recovery operations are completed. Airman Johnson, Bull, and the others are polishing their gear.

—DAVE KARTEN

ONE MAN'S MEAT

by SSgt. Gar. R. Maynard. *Photos by Eiji Kubota.*

For some airmen part of the fun of going on leave is anticipating the glamorous and exciting things that are expected to happen. But with A1C Dick Major it was different. The leave he planned for himself promised to be interesting and rewarding enough. But it included no bright lights and dancing girls. His plan altogether was a far cry from the conventional idea of rest and recuperation.

When Airman Major was assigned to a tour of duty in Japan, he immediately became interested in everything he saw around him. On his time off from duty with Hq., Air Material Force, Pacific Area, the 20-year-old toured far and wide over the surrounding countryside on foot. He watched Japanese farmers hard at work on patches of fields unbelievably small by American standards. On their knees between the rows they chopped weeds with infinite patience. Others stood ankle-deep in chill water clearing debris from the indispensable canals.

Major's own family operates a small truck farm back home at Bridgeport, Pa., and Dick became more and more impressed by the differences in the American and Japanese ways of life. It was on his way back from a climb on a nearby mountain that Major's idea was hatched. Why not take time off, a leave, to see at first hand how the Japanese really lived? He knew a little about farming, and wasn't afraid of work. But would a Japanese farmer want a stranger, an American airman with very little experience, around the place? It seemed at any rate to be worth a try.

Airman Major sent a letter to the local Japanese newspaper, *Yomiuri,* outlining his proposition. "Able-bodied young American wants temporary work as farm hand—wages not important—willing, industrious, can learn readily."

Within 24 hours, replies were coming in, each containing a warm invitation. The arrangements didn't take long, and Airman Major soon found himself in the employ of Mr. Takeichi Suzuki, a prominent local citizen whose nearby farm was operated by his son Mr. Eiichi Suzuki.

The Suzuki place was hardly typical of Japanese farms generally. It was more prosperous and larger than most, and Major found himself quartered in a private room in the colorful, comfortable farmhouse. The house itself might have been copied from a delicate Japanese print, complete with its elegant tea garden and elaborately ornamented roof. Instead of his familiar GI bunk and blankets, the new hand was given a *futon,* the sleeping gear used by Japanese.

On his first day as a member of the Suzuki household, Dick Major sat down to the evening meal with Mr. Suzuki, Senior, and Mr. Suzuki, Junior, with their wives and the two small children of the younger couple. For the main dish of the meal he was offered squid with the choice of having it either cooked or raw. Squid is a species of seafood unknown to a great many Americans, and wholly unfamiliar to Airman Major from Pennsylvania. He backed off cautiously from the raw version, but was pleasantly surprised to find that cooked squid can be tasty and appetizing.

Airman Major quickly fell into the daily routine o

rman Major shared the tine chores with his anese hosts. It was long before he was pletely accepted as friend of the family.

life on the farm. His day began at five in the morning with a two-hour stint of weeding the vegetable garden and rice paddies. Breakfast, a substantial repast like all meals at the Suzuki table, was served at seven. The hours until noon were then occupied in cultivating the crops and attending to the stock. There were 30 hogs to be fed, and 280 chickens which consumed enormous amounts of food in exchange for the eggs that appeared in long racks under the nests.

Custom and tradition decreed a short rest period for digestion following the hearty noon-time lunch, and chores were resumed at two in the afternoon. Major learned to operate the small utility tractor with its wide handlebars, its belts and pulleys, and a single headlight mounted amidships in front of the operator. He discovered, too, that a loaded vegetable basket could be carried comfortably slung across the shoulders. Soon he adopted the wide-brimmed straw hat favored by many Japanese as protection against the sun.

After the evening meal, until bedtime between nine and ten o'clock, the hours were spent in "socializing." Major carefully enunciated short sentences in English which were repeated by his Japanese friends until mastered. In turn they introduced him to the rudiments of Japanese. Occasionally in the evenings, Major would accompany the elder Suzuki on visits to smaller farms in the area. The American never ceased to be amazed at the industry and care exercised by Japanese farmers, some of whom coaxed a living from holdings covering less than one acre.

At the end of 17 days, the leave was over. Airman Major once again exchanged his straw field hat and work-stained trousers for Air Force uniform. What does he think of his unique experience as a farm hand? For one thing he is grateful for the new and sincere friends he made. "Chores on the farm are much as they are back home. And farm folk here are just as friendly and congenial as they are in Pennsylvania. The Suzukis and their neighbors are wonderful people, and I am happy to have had this experience."

Airman Major acquired a few callouses as a result of this unusual leave. But he also gained something more that will remain in his memory long after his hands are soft and his fingernails are clean again.

In the Name of Congress No. 30 IN A SERIES

Maj. Tommy McGuire, often a bridesmaid but never a bride, to his

WHEN TIMR

by SMSgt. Hal Bamford

EARLY IN 1943, a thin, wiry first lieutenant debarked in Australia from an Army transport. He was one of a group of replacement fighter pilots for the Southwest Pacific Theater.

Although just past his 22nd birthday, Lt. Thomas B. McGuire, Jr., was already a veteran of more than two years' service. He was assigned to the 9th Fighter Squadron, 49th Fighter Group, based in Australia, where war-trained pilots would ready him for combat.

During the next 22 months, McGuire was destined to become the second leading ace in United States Air Force history. However, he was also destined to become known as USAF's most persistent "bridesmaid." At the time of his arrival, Major Bong, the leading ace, already had scored eight wins. This margin would plague McGuire for months.

By mid-July, now a four-month veteran in the command, Lieutenant McGuire was transferred to the 431st Fighter Squadron of the 475th Fighter Group, which had been ordered forward to Port Moresby, New Guinea.

Shortly after the unit's arrival, Tommy McGuire rang up his initial victory and, by the opening of the new year, had projected himself into the fight for leading ace honors in the theater.

Such an elevated position in this brief span had not been attained without problems. For example, on October 15, while scoring a triple win in a heated air battle over Oro Bay, McGuire had been shot down and forced to parachute to safety.

Despite this mishap and the brevity of his tour, Captain McGuire had moved into a three-way tie for fourth place in the area's combat derby. More important, however, he trailed the leader, Capt. Dick Bong, by only eight kills, 19-11, a margin which was exactly the same as it had been upon his arrival in Australia 10 months earlier.

When Major Bong's score reached 28, he was ordered back to the States by Gen. George Kenny. (*Ace of Aces,* THE AIRMAN, November 1960.) By time, Major McGuire had raised his total to 20, eight behind, but now the way seemed clear for to push into the lead.

However, fate took a hand. First, in the face growing American might, Japanese aircraft became ceedingly scarce. Then, Major McGuire was st down by an attack of dengue fever. No sooner wa about to recover when he contracted malaria. By time he had whipped these opponents and was r again to tackle the primary ones, Major Bong back in the theater and ready to defend his lead.

On October 14, during his first post-hospital sion, McGuire scored a pair of wins and returne his home station convinced he had begun to close gap. However, he was greeted with the news that B too, had scored a pair and still led by the seemi inescapable eight.

Two weeks later, 20 P-38s of the 475th Group ordered forward to Tacloban airstrip in the Philipp Just south of the strip, the group was jumped b Japanese fighters. Led by McGuire, who was now 431st Squadron commander, the P-38s shot down Japanese without a single American loss. Major Guire scored his 23rd.

The two young aces continued their torrid through November and into December. Mc would get one; Bong would match it. Then would score a pair and McGuire would again the gap. By December 17, 1944, Bong's total reached 40, and the eight-margin lead not only but had been widened to nine.

On Christmas Day 1944, Major McGuire app to have broken Bong's hold over him. The accou the action of that day and the one that followe included in the citation which accompanied the m Medal of Honor, USAF's 40th.

de, his way to the altar

RAN OUT

He fought with conspicuous gallantry and intrepidity r Luzon, Philippine Islands. Voluntarily, he led a adron of 15 P-38s as top cover for heavy bombers king Mabalacat Airdrome, where his formation was cked by 20 aggressive Japanese fighters. In the en- g action he repeatedly flew to the aid of embattled rades, driving off enemy assaults while himself er attack and at times outnumbered three to one, even after his guns jammed, continuing the fight forcing a hostile plane into his wingman's line of Before he started back to his base he had shot n three Zeros. The next day he again volunteered ead escort fighters on a mission to strongly defended k Field. During the resultant engagement he again osed himself to attacks so that he might rescue a pled bomber. In rapid succession he shot down one raft, parried the attack of four enemy fighters, one hich he shot down, single-handedly engaged three e Japanese, destroying one, and then shot down another, his 38th victory in aerial combat. On 7 uary 1945, while leading a voluntary fighter sweep Los Negros Island, he risked an extremely haz- us maneuver at low altitude in an attempt to save low flyer from attack, crashed, and was reported ing in action. With gallant initiative, deep and lfish concern for the safety of others, and heroic rmination to destroy the enemy at all costs, Major Guire set an inspiring example in keeping with the est traditions of the military service.

Unfortunately, the citation does not tell the complete story of the period between McGuire's 38th victory and his death.

With the Bong-McGuire derby standing at 40-38, the way it would remain, General Kenney decided it was time to assure that the competition did not result in either man overextending himself.

Therefore, on the morning of December 27, he called both men into his office. First, he ordered Major Bong back to the States. Then he grounded Major McGuire. His reasoning was solid. He felt that Bong should be allowed to arrive in the States as America's all-time leading fighter ace. Additionally, he felt that the strain of McGuire's two-day, seven-victory battle had probably sapped a large part of his stamina and a rest was certainly in order.

Bong departed the Philippines on December 29. On January 6, General Kenney received word that he had arrived in the United States. The same afternoon he called Major McGuire into his office, this time to inform him he was once again free to return to the aerial wars. However, at the same time, he warned him not to press his luck too far in attempting to overtake his now-departed rival.

Major McGuire's first opportunity to catch the leader came the following morning. Scheduled to lead two new pilots in a routine mission, the flight took off shortly after dawn. At about 2,000 feet, they spotted a lone Japanese fighter barely above tree-top level. The group leaped to the attack and one of the newcomers found himself in almost immediate trouble. McGuire frantically pulled his fighter into a tight turn in an effort to extricate his student.

Instead, the aircraft was thrown into a high-speed stall. The low level of the combat prevented Major McGuire from bailing out and he was killed as his fighter smashed into the ground.

Major McGuire went to his death as one of this nation's most decorated heroes. In addition to the Medal of Honor, he also received the Silver Star with two oak leaf clusters, the Distinguished Flying Cross with five oak leaf clusters, the Air Medal with 14 oak leaf clusters and seven additional decorations.

Soon after his death, his comrades in the Southwest Pacific named an air base on Mindoro in his honor.

Today, McGuire AFB, N. J., stands as a lasting tribute to America's second leading ace of WW II.

prospects for promo

WHAT'S THE

TSgt. John K. O'Doherty, *Airman Staff*

SOME PEOPLE become uneasy when any change occurs in the routine of everyday living. And if the change looks big and important, perhaps affecting the whole course of a preplanned career, the uneasiness can become anxiety. About a year ago when the Air Force announced implementation of the 55/45 personnel program for Fiscal Year 1961, a number of persons experienced this sense of disquiet. For the most part, the concern was confined to people unfamiliar with the personnel business. But up and down the ranks many misconceptions arose.

Airmen, like people in every walk of life, are inclined to measure something new and unfamiliar by translating it into personal terms. "How does this affect me?" "Will this change the picture in my career field?" And, human nature being what it is, some people really strained the brain to come up with disagreeable—but off-the-target—answers.

The 55/45 program is a personnel management plan developed after nearly two years of study by officials at Headquarters, USAF. The ultimate goal—to be attained in orderly fashion over an extended time—is a stable enlisted personnel structure composed of 55 percent professional career airmen and 45 percent first-term enlistees. This balance, when achieved, will provide a solid platform of skill, experience, and leadership in the career force. The regular, continuing influx of new blood into the career force annually will allow for the development of new skills dictated by technological advances. At the same time, the promotion opportunities contained in the pattern of the 55/45 structure will provide the incentive necessary for a viable and vigorous force.

In its development stages at Headquarters, USAF, the program was discussed with the various agencies of the Air Staff. Most of the major air commands were asked for opinions. Modifications were made, loose threads snipped away, and weak spots shored up before the plan was declared ready for application. Fundamentally, the concept is based on three inseparable factors: *anticipated skill requirements imposed by technological advances, demonstrated enlistment and reenlistment habits of airmen, and manpower and money ceilings ordained by law or the Department of Defense.*

Selective Retention

The administrative instruments devised to implement the plan are based on the doctrine of *selective retention*—keystone of the program.

The selective reenlistment program basically effects two distinct elements of the enlisted force—The First Termer and the Career Airman with over 20 years of service. When the term "selective retention" first appeared in the Air Force vocabulary, airmen at both ends of the enlisted population looked at it with suspicion. The bright, ambitious first-termer, honestly interested in making the Air Force his career, chewed his fingernails on this one: "Here I am, an airman second, surrounded by airmen first. There's no chance of promotion soon. Does this mean they will throw me out when the four years are up?"

At the other end of the scale, some master sergeants approaching the 20-year mark decided that the future appeared ominous. "Look, I was good enough to fight in two wars; are they going to cast me aside now like an old shoe?"

The 55/45 program is rounding out its first year o

PICTURE?

operation. This experience, though brief, has been fruitful. Unpleasant developments predicted by misinformed prophets of gloom simply have not materialized. No young airman with the proper growth potential has been denied admission to the career force. No faithful old master sergeants have been turned out in the snow.

On the other hand, introduction of 55/45 has not brought about any immediate magical solution for personnel problems. No such miracle was ever expected. Difficulty was encountered in meeting selective reenlistment quotas in the first year of implementation. Although the Air Force did not achieve its reenlistment objectives, it refused to compromise its standards. Some applicants for career status were denied reenlistment.

The goal of a neat 55/45 package still lies some distance in the future. In some areas the career element in the Air Force is overcrowded, comprising some 62 percent of the total enlisted force. But as the forces of normal attrition and selective reenlistment interact, orderly progress in the direction of the ideal can be achieved. The movement toward the ideal will, among other things, provide the optimum in promotion opportunity—lack of which was reported as the primary factor for non-reenlistment of otherwise eligible airmen.

Future Promotions

Looking back once again to the important personal question, "What does all this mean to me?" the guidepost is found in promotion figures for recent years and programmed promotions for the future.

The last really good year for promotions—with respect to numbers—was Fiscal Year 1957. (This was the year in which the Department of Defense imposed a ceiling of 55 percent on the grades from A1C up.) Counting only the promotions to A1C and above, well over 140,000 people moved a step up the ladder in FY 1957. One out of every four eligible went from A1C to staff. One of every two eligible moved up from A2C to A1C.

But reenlistment rates were poor in FY 1957. There was a tremendous turnover in personnel, particularly at the level of A1C. Young men who thought the grass was greener off-base couldn't be persuaded to stay.

It was this low reenlistment rate, among other things, that inspired creation of the study group popularly known as the Cordiner Committee. The purpose of this group was to explore ways and means of making the military career more attractive. The committee published its report in 1957, and the Congress acted on some of its recommendations for improved career incentives. New benefits accruing to enlisted people included more housing, Medicare, Survivors' Benefits, the two super grades, and, later, the pay increase of 1958.

PROMOTIONS AND SELECTIVITY RATIOS

	FY 1957		FY 1958		FY 1959	
	Number	Ratio	Number	Ratio	Number	Ratio
E-8 Senior Master Sergeant					4,938	1-11
E-7 Master Sergeant	3,108	1-21	1,988	1-35	1,070	1-67
E-6 Technical Sergeant	7,092	1-18	4,934	1-28	2,430	1-61
E-5 Staff Sergeant	38,653	1-4	26,445	1-6	10,344	1-12
E-4 Airman First Class	91,877	1-2	31,639	1-6	25,948	1-8
TOTAL	140,730		65,006		45,230	
DOD Limitation		55%		55%		55%

AIRMAN PROMOTIONS AND SELECTION RATIOS, FY 1960 thru FY 1962

Grade	FY 1960 (Actual) Number	FY 1960 (Actual) Ratio*	FY 1961 (Programmed) Number	FY 1961 (Programmed) Ratio*	FY 1962 (Programmed) Number	FY 1962 (Programmed) Ratio*
E-9	1,597	1-3.1	2,000	1-3.6	1,900	1-5.0
E-8	4,110	1-11.9	4,600	1-9.4	4,250	1-8.6
E-7	1,897	1-37.7	3,520	1-20.0	5,120	1-13.5
E-6	3,103	1-47.8	5,100	1-29.1	7,300	1-20.3
E-5	10,708	1-10.8	12,000	1-10.3	16,200	1-8.5
E-4	38,178	1-5.1	54,469	1-3.1	53,256	1-3.1
TOTAL	59,593		81,689		88,026	
DOD Limitation		57.5%		58.5%		58.5%

* Ratio is the result of the number of promotions allocated for the fiscal year into the number of airmen on hand in next lower grade, at the beginning of the year.

The Air Force at the same time reemphasized a number of internal policies aimed at solving some of the existing problems. Among these were such things as enhancement of NCO prestige, dependents' assistance programs, in-service education, and career counseling.

With Fiscal Year 1958, retention showed a marked improvement. More people reenlisted, but with the prevailing 55 percent limitation on the upper grades, promotion opportunities declined sharply. It is inevitable that if the retention rate rises without appropriate control, such as those embodied in the 55/45 concept, promotions must slow down so long as the ceiling exists. It is highly unlikely that it could happen, but if retention ever reached 100 percent everybody would be frozen in position, except for vacancies occurring through attrition. Opportunities for promotion would come along only after someone died. When one master sergeant passed on to his reward, or retired, one man in each grade below could be moved up one step. Everyone else must sit back and wait for the next visitation.

Thus the number of promotions dropped from over 140,800 in FY 1957 to exactly 65,006 for the grades A1C and above in 1958. Instead of one in every two A2C moving up, only one of every six eligible made the grade. Only one staff out of every 28 eligible made tech, and one tech out of every 35 made master.

In the following year, FY 1959, the situation became even worse. The year 1959, as a matter of fact, is distinguished as the worst year for promotions in Air Force history. In this black year only one staff in every 61 eligible made tech, only one tech in 67 made master. Total promotions for the year (A1C and above) were 45,230, less than a third of the number logged in 1957.

By the end of FY 1959, jokes about frozen career fields were wearing pretty thin. Thousands of young men moving into career status were stuck in grade. World War II types faced the unpleasant fact that there was little chance of making master before retirement. The Air Force had won the battle for retention, but the threat of promotion stagnation reared its ugly head. Such a situation could quickly drain the starch from the military organization. It was time for a turn in the tide.

Personnel officials at Headquarters, USAF, prevailed on the Department of Defense to raise the ceiling on the upper grades to 57.5. This modest increase became effective for Fiscal Year 1960. Overall promotions for the year in the upper grades jumped by more than 14,000. The number of techs moving up to master in 1960 was one in every 37 eligible, as opposed to one in 67 for 1959. Similar improvements were reflected in the other grades.

Figures for the current year, FY 1961, reflect an even more striking improvement. The Department of Defense has granted an additional increase in the ceiling for the upper grades to 58.5 percent. This relief, coupled with a natural increase in normal attrition, will permit 22,096 more promotions for FY 1961 over 1960.* Most promotions for FY '61 have already been made, but the remaining cycles between now and June 30 will round out a total for the year of 81,689. This is a nice improvement over the all-time low of 45,230 recorded in 1959.

*Note: All promotion figures cited apply to the grades of A1C and above. Promotions to A3C and A2C are not included.

Looking ahead to programmed promotions for Fiscal Year 1962—beginning on 1 July 1961—the picture becomes even brighter. It is expected that more promotions will be made in FY '62 than in any year since 1957. With the same DOD ceiling of 58.5 percent in effect, 88,026 airmen will sew on new stripes between 1 July 1961 and 30 June 1962. About one A2C in every three eligible will step up to A1C. In round figures, one tech in every 13 eligible will make master, and one E-8 in every five will make E-9. Figures for the other grades are equally encouraging. The year will bring 7,300 new tech sergeants, for a ratio of about one in every 20 staffs eligible.

This pattern of events over the past several years shows that orderly promotion opportunities can be maintained only by a realistic ceiling and controlled retention. The balance between the two tells the story.

It may be appropriate at this point to shoot down a misconception held by many airmen sweating out vacancies in the top grades. While the generation of World War II types is now approaching the 20-year mark in fairly substantial numbers, no mass deluge of 20-year retirements is expected to strike the Air Force for a number of years. The big retirement bulge in the Air Force dates back not to World War II but to Korea. The number of men who remained in uniform after 1945 with continuous service to the present time is relatively small. A much greater number who re-upped or were recalled for Korea stayed on, and this generation will begin to reach the 20-year mark after 1965.

AIRMAN RETIREMENTS

with over 20 years of service

	1959— 2,740 (actual)
	1960— 4,417 (actual)
Estimates for Fiscal Years 1961 thru 1965 are based on current retirement factors.	**1961— 6,800**
	1962—10,000
	1963—11,200
	1964—11,500
	1965—11,700

As an interesting sidelight, the record shows that during the first ten full years of the existence of the Air Force only 8,000 enlisted men applied for nondisability retirement. The accompanying tables show actual losses through nondisability retirement in past years and projected losses through 1965.

In planning promotion quotas for the future, personnel officials reach a decision by examining reenlistment and retirement habits of past years and by judicious evaluation of other factors which might influence the personnel structure. Experience shows that 30 percent of all eligible airmen apply for retirement promptly upon reaching 20 years. The others follow in more or less equal groups up to 30 years. There is also a normal reenlistment loss of about 15 percent at the 10-year point and about five percent at 16 years.

Some nonmilitary factors, naturally, exercise influence over the statistics. If the civilian economy is booming, with plenty of good jobs at high wages available, retention must be watched closely, particularly first term retention. If times are a bit tight, the first-termer will be more inclined to reenlist and the 20-year man may decide to wait for a year or two before putting in his papers. But only a crystal ball could divulge all the factors that might arise to sway the decisions of individuals.

Significantly, the only point at which positive control is applied is at the end of the airman's first hitch, on the threshold of career status. Once the four-year barrier is passed, the Air Force strives continually to retain its qualified career personnel, but imposes no numerical reenlistment control. Retention over the years up to the point of earning retirement benefits is left to the decision of the individual—provided, naturally, that he can meet the normal reenlistment requirements as each hitch is completed.

Even the recently published AFR 39-19 calling for re-evaluation of all airmen reaching 20 years can have little influence on the reenlistment rate. Principal criteria embodied in the regulation are the questions of the service requirement and individual performance. Although the regulation provides for numerical control of reenlistments at the 20-year point, forced retirement to meet possible numerical objectives is not in the cards anytime soon.

The ideal well-balanced Air Force toward which all personnel policies are aimed should contain about ten percent of its noncoms in the bracket between 20 and 30 years of service. This "old soldier" element would have a beneficial influence on young men coming up through the ranks. But the number of such people on board at present is only in the area of about three percent, and retirement habits indicate that it will be some time before the ideal is reached.

It is unlikely that quotas for selective reenlistment beyond 20 years will be established before FY 1963. Beyond that time it may become necessary to impose restrictions by numbers in certain specified career fields. But the non-reenlistment quotas imposed on these

The big "C" for Career *status could assume more and more significance as the effects of 55/45 are felt.*

career fields are expected to be quite small. In addition, official policy encourages retraining, even for the oldsters, when the career field threatens to become overcrowded.

Development of policies relative to promotions and other personnel matters at Headquarters, USAF, is a deliberate process involving exhaustive study. Before the final stamp of official approval is bestowed, all possible implications are explored. Primary consideration in the evolution of a new policy, obviously, is the anticipated effect on combat effectiveness. And all the factors contributing to combat effectiveness—incentive, morale, possibility of undue hardship, personal well-being—have their place in the examination process.

A good many of the thoughts generated during preliminary study fail to survive to the point of being incorporated into official policy. Some are dropped and forgotten early in the game; others are preserved for possible future consideration in a new arrangement of circumstances. Of these, some have an interesting flavor, if only as food for thought.

Some officials, hopefully, would like to see the present DOD ceiling of 58.5 percent in the upper grades raised to 60 percent. Then as the career force approaches stability at 55 percent, the margin of latitude will permit promotion of substantial numbers of first-termers to A1C before the end of the initial hitch. From this element the top cream will be skimmed each year to provide for the annual augmentation of the career force as retirees and others who drop out of the career force are replaced.

Another point of view holds that the big "C" for career status should assume greater and greater significance as the stabilizing influences of 55/45 are realized. The "C" could become the determining factor in connection with certain privileges and allowances, rather than rank alone, or the present combination of grade and length of service applying to A1C. Thus an airman transitioning into career status might become eligible for housing or transportation for his family, regardless of his military rank.

Certain administrative functions devised during the period of rapid turnover in personnel continue to survive. Some of these might be eliminated in the newer climate of enlisted thinking, and as the true stature of the career man comes into proper focus.

The requirement, for example, for taking a short discharge or extending the enlistment to serve an overseas tour or to meet specific retainability requirements would have little to support it where career people are concerned. The short discharge costs the individual money. Consequently extensions are usually made and cancelled in favor of re-up on the scheduled date. Another solution to the problem is the suggestion to permit payment of full reenlistment entitlements (travel and terminal leave payments) to airmen taking short discharges for the purpose of reenlisting immediately. This would eliminate the necessity for extensions as a means of accruing full entitlements.

Some other countries have solved the problem of achieving balance between the career and non-career elements of the military structure by providing only for two hitches. The first, for three or perhaps four years, gives an opportunity to determine the man's suitability for a military career. The second, for sixteen or seventeen years, insures that he will be on board continuously for the future as a professional.

But it is doubtful if such an inflexible arrangement could ever be made to apply to Americans. It would for one thing be incompatible with the national character. Americans place great value on freedom of choice, even though consistently high reenlistment rates in the case of the men comprising the present-day career force indicate it is largely a matter of principle.

In the meantime, promotion opportunities show signs of improving as far ahead as the eye can see. ■

Control of space
will be decided in the next decade.
If the Soviets control space
they can control earth.

John F. Kennedy

Contrail of the first SAMOS launch. Photo by SMSgt. Edison T. Blair, Airman Staff

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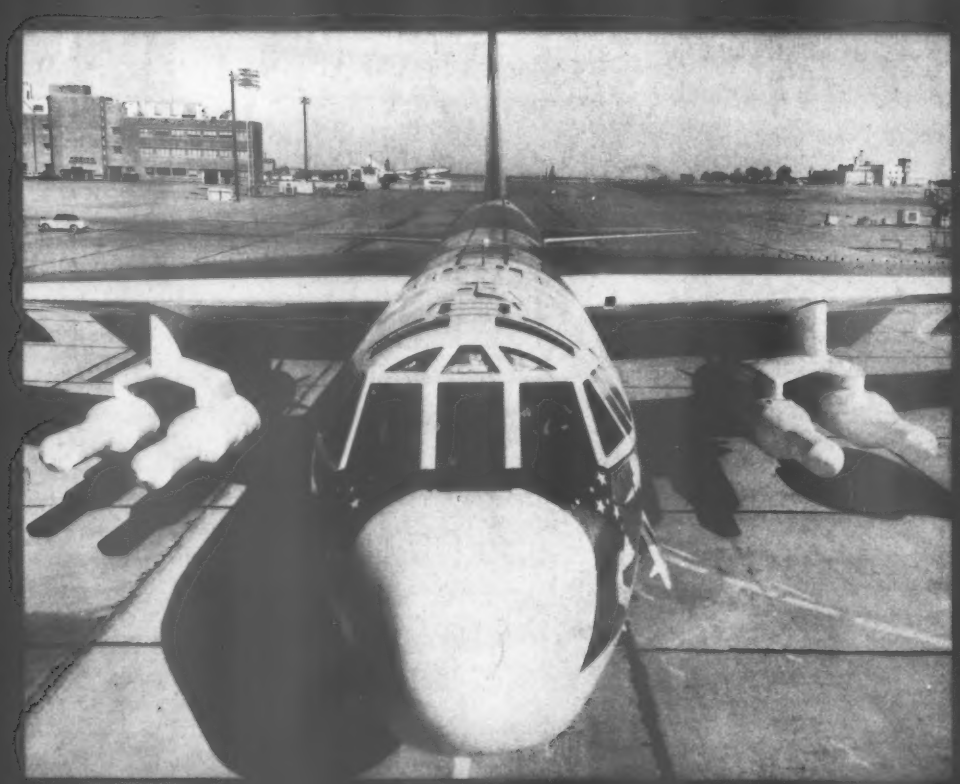

Photo by Boeing